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CONTENTS

British Transport Commission Developments

THE British Transport Commission has commenced its acquisition of road haulage undertakings and the Docks & Inland Waterways Executive has taken over the South Wales docks. Agreements have now been reached for the acquisition of shares in 115 road haulage undertakings, which own 3,490 vehicles and 364 trailers. These acquisitions were announced by Mr. Alfred Barnes in the House of Commons on July 26. On August 4 the British Transport Commission announced the names of 23 companies which had been acquired from the previous day. These included the Holdsworth-Hanson group, which alone has a value approaching £3,000,000. Bouts-Tillotson, Bradford-Leicester Transport, William Burrill, City Express Motors, F. H. Croft (Yiadom), W. V. Greenwood, J. S. Hutchinson, MacCarriers, R. V. Morris, J. Poulper & Sons, Queen Carriage, Ryburn United Transport, and S. L. Whiteley's Transport are also included in the published list of undertakings acquired. On August 1 the Docks & Inland Waterways Executive took over the formerly railway-owned ports in South Wales. This marked the first stage in the transfer of railway-owned ports from the Railway Executive to the Docks & Inland Waterways Executive.

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Railway Deferred Maintenance Funds

The Ministry of Transport has announced that the trust funds set up under Article 19 of the Railway Control Agreement have been wound up in accordance with Section 27(3) of the Transport Act, 1947. The moneys in the funds, totalling £151,355,724, have been handed over to the British Transport Commission. This sum represents, with interest, the net difference between actual expenditure on maintenance by the controlled undertakings during the period of Government control and the standard amount that the railways were permitted to charge for this purpose under the provisions of the Railway Control Agreement. The Minister of Transport, Mr. Alfred Barnes, M.P., in a letter to Sir Reginald Hill, Managing Trustee nominated by the Government, has expressed appreciation of the co-operative spirit shown by the trustees in all their transactions.

* * * *

Anglo-American Joint Council

Both the F.B.I. and the T.U.C. have agreed to support the proposals for an Anglo-American Joint Council on Productivity announced by Sir Stafford Cripps in Paris last week. The sole task of the council at the present stage will be to examine what methods of mutual aid can be devised. There is no question of American industrialists being invited to make critical inspections of individual British industries or bodies of workers. Criticism of the scheme when it was first announced arose apparently from insufficient knowledge of the terms of reference of the proposals. An official statement issued by the F.B.I. on July 29, points out that, provided the council is composed of industrialists of the highest standing in a wide range of industries and that no hard and fast rules are laid down, much advantage could be gained from such a scheme, and British industry would be glad if a joint consideration of its basic problems enabled the American people and Congress to obtain a true perspective of conditions. In many branches of industry, exchanges of technique between Great Britain and the United States already are proving helpful, and any facilities that will improve this position still further will be welcome.

* * * *

The Cost of Political Interference

We have previously commented on the confusion which attended the decision by the Minister of Transport to convert locomotives from coal to oil burning during the fuel crisis. The lack of success which attended this experiment and the final abandonment of the scheme resulted in a loss of £3,000,000. The cost of the scheme, the Parliamentary Secretary to the Ministry of Transport has explained to the House of Commons, has been borne mainly by the Government through the Railway Control Commission account. The whole of the scheme, in our view, was ill-conceived, and was an example of political interference in a technical matter which

would have been far better left to the railway managements themselves. If it had been decided that conversion to oil firing was desirable, a wiser plan would have been to have concentrated on dealing with one of the then main-line railways. The Great Western Railway had made some progress on its own initiative in this direction, and if further conversions had been made on that system, not only would sufficient equipment probably have been available to effect the change, and therefore to have made possible some saving in the use of coal, but it would have enabled comparison to have been made between a line predominently operated on an oil-fired basis with others adhering to coal burning or electric traction.

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Overseas Railway Traffics

With the ending of the financial year on June 30; Midland Uruguay traffics showed an improvement on aggregate of £28,135, the last month having brought an increase in receipts of £5,169. North-Western Uruguay traffics finished the year less buoyantly. June operations resulting in a decline of £1,664, and the aggregate result being £3,243 behind 1946-47. The new financial year on the Paraguay Central has opened with improving figures, the aggregate gain for the three weeks to July 23 having been G151,320. Last May the system experienced falling traffics as a result of disturbed political conditions in the country. On the other hand, the second half of the financial year on the Great Western of Brazil compares unfavourably with twelve months ago. In the first fortnight of the current half-year there have been decreases of £3,600 and £3,100. Antofagasta (Chili) & Bolivia traffics have begun the second half of the year with some substantial advances, totalling £54,040 in the first four weeks. Gold Coast traffics, also, are among those showing noteworthy improvements over the previous twelve months, the gain in June having been £67,243, which has contributed to an overall advance in thirteen weeks of £189,875.

* * * *

Two Years of the Road-Rail Licensing Scheme

It is two years since the resumption of normal road goods vehicle licensing, and the setting up, through the joint road-rail procedure, of the negotiating committees. According to statistics prepared for the Central Licensing Sub-Committee of the Road & Rail Conference, 59,831 applications for "A" or "B" licences were published during the two years to June 26 last. Of these no less than 27,515 were the subject of discussion by negotiating committees. In 15,035 cases it was found possible to reach agreement, with the result that road and rail objections were withdrawn before the applications were heard in the traffic courts. Both applicants and objectors have benefited by saving in time and cost. Members of the committees have given their time freely to the work, which has been considerable, but a secretarial organisation has had to be maintained in each of the traffic areas, and the cost of this organisation has fallen on the railways and the Road Haulage Association.

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Higher Fares in New York

After long survival among the dwindling number of facilities that could be had for a nickel (5 cents), the flat rate of 5 cents for a journey of any distance on the New York City Transit System was withdrawn at midnight on June 30. The new fare is 10 cents on the subway and elevated lines, and 7 cents on buses and trams. For journeys using both means of transport, a transfer charge is made which brings the total up to 12 cents for any distance. The proposals which have now been adopted were put forward in a letter to the Mayor of New York from the Board of Transportation on April 20. Here it was shown that revenue of the department for the year ended June 30, 1949, based on the previous charges, was estimated at $137,825,000, against which there would have been expenses of $177,185,000, leaving an operating deficit of $39,360,000. At the same time the department was of the opinion that the time had come for raising the wages and numbers of its employees. Under the new scheme the charge of 2 cents which used to be made at some 200 places for transfer between surface transport lines has been abolished; and at the same time the number of free transfer points between rapid transit lines has been increased.

* * * *

Office Aid to the Factory

In 1943, at the request of the Ministry of Production, the British Standards Institution set up an expert committee to prepare booklets giving guidance on business administration in factories, particularly bearing in mind the need for economising in clerical manpower and for efficient industrial production. Although it was recognised as being outside its usual field, the B.S.I. undertook the work in the absence of any more appropriate organisation at the time. The following publications have been issued:—Principles of production control; Production control in the small factory; Application of production control; Pay-roll methods; Stock control and storekeeping; Office mechanisation; Drawing office organisation; Office organisation and practice. It was intended that the remaining parts should deal with costing and with industrial charting. The booklets appear to have met a need, as a total of more than 140,000 copies have been distributed. It is felt that the arrangements are equally applicable to peacetime, and as from July 1, the British Standards Institution has transferred this work to the British Institute of Management, 17, Hill Street, London, W.1.

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Art and the Industrial Revolution

Dr. Francis D. Klingender has made a particular study of the impact on art of the vast economic and social changes begun by the industrial revolution, and recently he made this the subject of a fascinating volume* which records much that has passed unnoticed through the increasing specialisation in particular industries. As is to be expected, railways occupy an outstanding place. The particular attraction of the book is the very fine reproduction of well-chosen and often unusual subjects for the collection of illustrations. There are no fewer than 15 colour plates, and 106 half-tone illustrations, and the assembly of these alone, within the covers of one book, makes it an unique work, and a most interesting contribution to social history. The Railway Age forms the subject of a chapter which is very far from being a hackneyed repetition of familiar material, but it would be misleading to imply that railway interest is confined to this chapter, for the whole work provides that rare but important type of study, namely, one which places industrial development in perspective in relation to the life of the nation.

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The Collision near Farnborough

Although the facts involved in the collision near Farnborough, on the then Southern Railway, on November 26, 1947, were not in dispute, a great many points came up for consideration by Lt.-Colonel E. Woodhouse when he inquired into the case, and his report, summarised in this issue, is necessarily very detailed. The primary cause of the collision was the issue of an instruction to the driver of the second train, after a power supply failure, to ignore certain automatic signals, without first going through the procedure for establishing emergency block working and making sure that the section covered by the instruction was in fact unoccupied. For this the signalman at Fleet is held responsible. The first train was stopped at a failed signal and its driver could not establish communication with Farnborough box, whence instructions on how he was to act had to come. The report deals at length with a number of technical and operating matters and makes suggestions and recommendations covering the procedure for bringing block working into operation, the provision of "power off" indicators, modifications in the existing omnibus telephone circuit arrangements, and the working of the "P" signs, which are at present controlled on this section by group switching and not individually.

* "Art and the Industrial Revolution." By Francis D. Klingender. London: Noel Carrington, Royle Publications Limited, 29, Percy Street, W.1. 10 in. × 7½ in. 232 pp. Illustrated. Price 21s. net.

P.R.Os in U.S.A.

"THE public be damned!" is reputed to have been the reply of W. H. Vanderbilt to a query whether passengers should be consulted about the running of luxury trains over his system. Some 70 years later, the news about American travel is that "New Haven passengers get what they asked for—$20 million worth." The dollars are the price of 207 coaches, equipped with a special type of bogie, high-speed brakes and tight-lock couplers, which will cause "shake, sway and jolt to disappear into thin air." So say the New York, New Haven & Hartford Railroad's advertisements, adding that "smart aluminium interiors, pleasantly air-conditioned, add delightful all-weather ease. New fluorescent lighting eliminates all shadow and glare. Pneumatic doors open automatically at a fingertip touch. Partitioned smoking lounges fitted in each coach offer a charmed setting for leisure *en route*. And all these are but *typical* of the many outstanding innovations provided." Altogether the New Haven's patrons are to get a fresh definition of train travel!

These two items show how, in the space of a lifetime, America has passed from the heyday of railway autocracy to the era of public relations. That term is not old enough to have found its way into our standard dictionaries. It denotes a process of cultivating goodwill that far exceeds the scope of ordinary publicity or advertising. Nothing will suffice short of a persistent effort to put the case for the railways before the people by explaining the kind of services provided and supplying full details about the work done. Operating results, working costs, and the financial position of the railways must be discussed with great frankness. Throughout 1947, the Association of American Railroads lost no opportunity of pointing out the need for liberal capital expenditure to maintain railway properties efficiently and improve facilities. The A.A.R. stressed the argument that large programmes of improvements, undertaken since the war, cannot be extended unless the railways are allowed by the regulatory authorities to earn an average return of not less than 6 per cent. on their net property investment.

In 1934 the Association of American Railroads was fortunate in selecting a remarkable man as "Assistant to the President in Charge of Public Relations." Colonel R. S. Henry was educated at Vanderbilt University, where he took two degrees and then did a post-graduate course of study at Queens' College, Cambridge. Before he entered the railway service, he saw the world as journalist, lawyer, and soldier. He became well known as historian of the Civil War and Reconstruction periods, acquiring a literary style which made him a popular writer and speaker on railway problems after he came to Washington. One of his books about railways, "This Fascinating Railroad Business," reached its third edition in 1947 and is on the shelves of most American libraries. Last year, also, the A.A.R. marked its appreciation of Colonel Henry's work by electing him a Vice-President.

Part of the A.A.R.'s publicity arrangements is a Press & Radio Section, but its educational methods have distinctive features on a higher plane than press communications and broadcasting to the populace. The resources of its departments dealing with law, traffic, operating, accounting, finance, and railway economics are mustered to explain railway policies and discuss the outlook. Here are examples of work which is done regularly:—

1. Weekly analysis of wagon loadings.
2. Monthly bulletin entitled *The National Transportation Situation* (see page 647 of our June 4 issue).
3. Monthly statement of railway revenues and expenses, showing separate results for each system.
4. Monthly operating statistics for the principal railways.
5. Annual statistics of performance for all railways.
6. Annual review of railway operations, published in May, with figures corrected to April.
7. A year book of railroad information, based on 5 and 6, published in June.

From time to time, other material is published as occasion arises. For example, in July, 1947, a booklet entitled "Railroads in this Century" condensed the history of the railway industry from 1900 to 1946 into 24 tables of statistics and charts. Another pamphlet, issued recently, gives the railway mileage operated by each steam railway in each of the 48 States—a matter of some consequence as railways are regulated within the several States as well as by the Interstate Commerce Commission for through traffic. Typical of the Association's methods was the wide publicity accorded to the work of the Railroad Committee for the Study of Transportation, set up in 1942. More than one million copies of reports and documents produced by the Committee, or connected with its inquiries, have been circulated. This huge total includes two editions, each of 10,000 copies, of the Committee's final report, which was reviewed in our issue of October 17, 1947. Sets of all the reports have been placed in public libraries for consultation of those interested in transport problems.

By these methods, the A.A.R. has done sound construction work in the field of public relations. Not content with the progress made, it plans to extend its activities. Possibly, a change of tactics in the approach to the American people is necessary to maintain the interest already aroused in the railway position. In this country there is no danger of public relations work slipping into a groove, so far as railway matters are concerned, for the simple reason that it has not yet emerged from an elementary stage. A welcome first step, however, has been the issue of the monthly bulletin of *Transport Statistics* by the British Transport Commission.

* * * *

Management of Large-Scale Industries

THE increasing State control of large-scale industries, both in this country and abroad, inevitably has tended to focus attention on the problems of management and administration which must arise with the growth in size and complexity of the organisation involved. In Great Britain coal, transport, electricity, and gas are four of the industries for which the State has taken responsibility. These experiments in Socialism, so far, have not been markedly successful in their results, but clearly at so early a stage in the development of State quasi-commercial administration, much has still to be learned. Probably those most intimately connected with the administration of these industries are the most acutely conscious of the need to evolve organisations which will be attuned to modern conditions. In the search for these it is but natural that some thought should be given to the experiments that have been made in other parts of the world, notably in Russia.

Recently, Mr. T. G. Rose, M.I.Mech.E., contributed an article to a short series on managing big industries in *The Financial Times* in which he dealt with interesting facets of the Russian development in socialised industry. He showed that Russian ideas on industrial management have changed considerably since the Bolshevik revolution. Even in the earliest days true workers' control lasted but three months, and although the theory of industrial democracy was retained, in practice management was recognised as a distinct function. At first management was exercised by committees, but in 1920 it was decided that single responsible managers should replace committees of management. Industrial management in the U.S.S.R. from 1933 onwards came to approximate more and more to the accepted arrangement in capitalist countries. Progress was helped by the fact that a new class of industrial managers, trained from the ranks of the operatives, was emerging from the technical colleges in increasing numbers, and, in 1939, when there was again clamour for workers' control, it was effectively resisted by the managerial class.

In the administration of large groups of any kind, two fundamental principles should be observed. Whatever degree of centralisation is carried out, and whatever advantage may flow from it in the way of standardisation, bulk purchase, the provision of central services, and so forth, it is essential that the freedom of the man on the spot should not be sacrificed. The second is that where in an organisation there are recognisable focal points at which operational authority is concentrated in the hands of one man, and is exercisable within predetermined limits of freedom, it is vital that these units must not be of greater size than one man can control adequately in the necessary detail.

One of the lessons which has been hard learned, both in Russia and in many capitalist large-scale enterprises, has been that management functions, in general, cannot be exercised efficiently by committees. This is strikingly borne out by a study of the development of the organisation of Imperial Chemical Industries. That company is organised into 11 divisions, each making a different series of products. Each divi-

sion is managed directly by a Division Chairman and a board of directors. Originally, members of the central board of directors, who devoted all their time to the business, were free from the burdens of defined executive duties. They were, of course, fully cognisant of the general policy of the company and each of them was freely at the disposal of any member of the organisation who needed guidance on some aspect of the work with which he might be concerned.

The board itself also delegated its authority to two committees of its own members—the General Purposes Committee and the Finance Committee. The executive duties were performed by the Managing Director. The necessary co-ordinating link between him and his full-time colleagues on the General Purposes Committee and the various group executives was provided by an intermediate body called the Central Administration Committee. This was composed of the Group Chairman and a number of headquarters senior officers and was presided over by one of the directors.

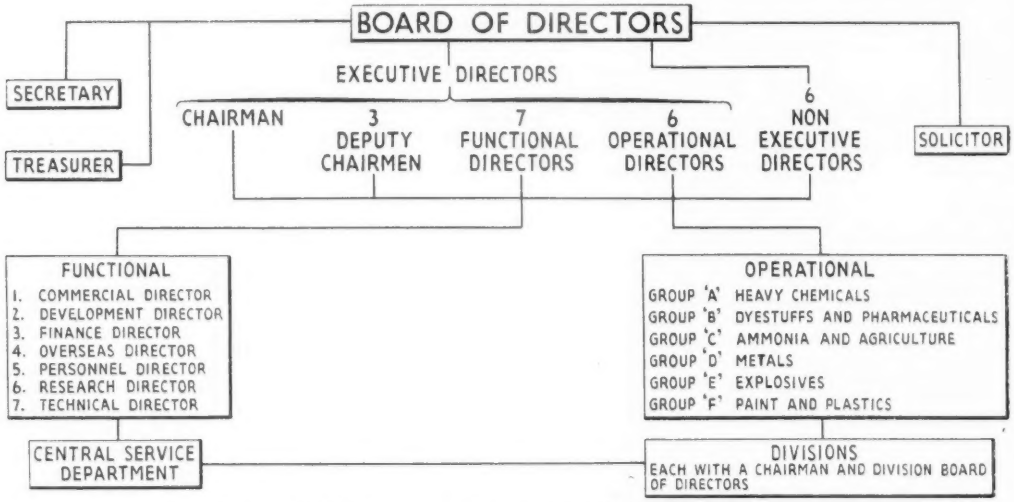
In 1937 this scheme of organisation was modified, when the Managing Director was freed from the task of taking everyday decisions on current business. That responsibility was handed over to seven executive directors entrusted with the several sections of administration, namely, commercial, financial, overseas, personnel, research, technical, and the groups' Central Committee. The General Purposes Committee was reconstituted as a Management Board which carried out collectively the duties hitherto performed by the Managing Director. Within prescribed limits these executive directors acted independently on their own or their committees' initiative, and beyond those limits they brought major problems to the management board, which was also made aware of their individual decisions.

This organisation was modified again in 1933-34 when the set-up shown in the attached diagram was adopted. The chief feature now is a four-fold division of function among the members of the board. The Chairman and Vice-Chairman are full-time executive directors, freed from specific responsibilities; there are the other executive directors, themselves divided into functional and operational directors, and finally there are the non-executive or lay directors. The purpose and usefulness of the last named are well understood in the industrial world —they are the "technicians of general ideas." The executive directors each have specialist knowledge, but some explanation is required of the division of responsibility between the functional and operational executive directors.

The manufacturing units of the company are organised in divisions controlled by a division board consisting of senior officials engaged in the day-to-day running of the division. Co-operation between these boards is secured by a system of visiting division directors; for example, the chairman of one division sits on the board of another as a visiting director. For the purpose of central control, the divisions are arranged in five groups and for each of these groups one of the operational directors is responsible. Therefore, besides his general responsibility as a member of the board, the operational director is responsible for the efficiency of his group. He is the link between the divisions for which he is responsible and the board. He carries downwards the general policy and particular decisions of the board, and he carries upwards the suggestions and local decisions of the divisions. Secondly, he has responsibility for authorising in the name of the board capital expenditure within any of the divisions for which he is responsible up to a limit of £20,000. Thirdly, he acts as a link between his divisions and the central services of the company which come under the functional directors.

Each functional director is responsible for one of the "arms of the service," which is common to all the divisions in the organisation—commerce, development, finance, etc. He is assisted by a central service department, the function of which is to co-ordinate the functional services.

It is clear from both the Russian and the I.C.I. development that the control of an organisation must grow from and with the organisation itself. Applying the lesson to the nationalised industries, and perhaps to transport in particular, it may be suggested that the value of non-executive directors as a balance to functional and operational directors in the I.C.I. organisation might well be studied with a view to the adoption of the principle, modified to meet the especial considerations of a State-owned industry. The movement away from administration by committee in both the examples we have cited is not without its value to the student.



The organisation evolved by Imperial Chemical Industries

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Malayan Railway

THE first post-war report of the Malayan Railway, which we have received from the General Manager, Mr. J. O. Sanders, covers the period from April 1 to December 31, 1946. From September, 1945, until the end of March, 1946, the railway was under military control, and civil Government was resumed on April 1 of the latter year. When the British forces entered Malaya on September 1, 1945, it was found that the main line between Singapore and the Siamese frontier was intact, together with the Port Swettenham and Port Dickson branches, although the condition of the permanent way necessitated reduced speeds.

The Japanese authorities had removed the rails from 200 miles of the East Coast line running between Mentakab and Krai, and from the branches to Teluk Anson, Tronoh, and Malacca, the whole totalling 276 miles of running line and 57 miles of second track and sidings. Reconstruction was begun by the military authorities, who, among other work,

put in hand the restoration of the Connaught Bridge at Klang (on the Port Swettenham branch). The bridge was reopened on July 6, 1946 (see our March 7, 1947, issue).

Under the civil administration, the Railway Construction Department was re-established, and by the end of 1946 the 18-mile Teluk Anson branch was relaid, and substantial progress had been made in clearing debris and erecting temporary accommodation at Sentul Works and Kuala Lumpur running sheds, which had been damaged extensively by Allied bombing. Work on restoring the East Coast line was slowed up by a shortage of sleepers. The report shows, however, that the route-mileage open to traffic during the nine months was 74 per cent. of the 1939 figure, and that about half the normal pre-war passenger services were restored, while goods tonnage was 61 per cent. of that in 1939.

Financial results in the report are for the nine months, April to December, 1946, and are compared with the full year 1940, a monthly average figure for the two years being given also, as shown in the table below:—

	Year 1940	Nine months 1946	Av. per month Inc. or dec.
	$	$	$
Passengers	5,619,720	7,244,213	+336,602
Parcels and other merchandise by passenger trains (including mails)	888,265	1,240,752	+63,839
Goods traffic	10,221,336	9,594,540	+214,282
Miscellaneous	299,677	179,389	−5,041
Road motor services	341,415	15,777	− 26,698
Rents	716,816	478,168	−6,605
Revenue	18,087,299	18,752,840	—
Expenditure	12,978,382	14,071,319	—
Surplus	5,108,847	4,681,521	—
Contribution to renewals fund	2,044,922	2,393,675	—
Surplus	3,063,925	2,287,846	—

Passenger journeys in all classes during the nine months totalled 4,282,935 and brought in a revenue of $7,244,212, comparing with $4,365,175 in 1939, with which year, in this case, the comparisons are made. The average fare paid was $1·69, as against $0·38 in 1939, the higher figure being accounted for by an increase in the average length of journey resulting from the suspension of most of the local train services. On August 2, 1946, a weekly through service was instituted between Prai (Penang) and Bangkok. A mixed train running once a week in each direction began to run on September 29, 1946, between Prai and Tumpat *via* Siam, in order to meet the urgent needs of traders. The service was duplicated on November 28, 1946.

There was a continuous improvement in the number of passenger coaches available. Buffet cars were provided on the day mail trains, and on other services brake vans were equipped for cooking so as to provide refreshments. Ten of the 11 pre-war sleeping saloons were lost, but arrangements were made to provide bedding and linen in first and second class open coaches on certain trains.

Goods tonnage increased month by month during the nine months covered by the report, and reached a total of 865,164 tons. The revenue of $9,594,541 compared with $10,024,096 for the full year 1940. Monthly average tonnage figures compared with 1939 show an increase of 18 per cent. in general merchandise and 16 per cent. in rubber. Increased goods rates came into force on May 21, and higher passenger fares were initiated on August 1, 1946, in order to offset the rising working costs.

The locomotive position was better in the fourth quarter of 1946, and there was a marked improvement in punctuality, the average number of minutes late on arrival of passenger trains during December being 4·7 min. Most of the machinery available at running sheds was in a poor state of repair, but as new equipment becomes available for Sentul works, second-hand lathes, drills, and other tools from the works are being distributed among the running sheds. At the Singapore running shed, however, new machinery obtained from the Army was installed and proved extremely useful. The Singapore running shed was used to put new locomotives and wagons received from the United Kingdom and India into running order. In September, 1945, about a third of the pre-war stock of 179 locomotives was still in Malaya and in usable condition; 54 locomotives had been removed to Siam and Burma, and the remainder required heavy repairs.

During the year under review, a total of 44 locomotives and one steam railcar, imported by the Japanese, were withdrawn from service. Sixteen Malayan 4-6-0 "P" class locomotives were handed over to the Royal State Railways of Siam for the movement of rice for export, and 3 of class "A" were sold to the Singapore Harbour Board. During the year the administration received 28 2-8-2 "MacArthur" locomotives from the War Department, and 14 "564" class Pacifics from the United Kingdom. At the end of the year the stock of serviceable locomotives was 112; 71 were under and awaiting repair; and 11 were still in Siam.

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The Somerset & Dorset Railway

AS the third largest joint railway in Great Britain, the Somerset & Dorset Railway provided an efficient trunk route between the West of England and the South Coast which proved invaluable to the country during two world wars. It was one of the most interesting of the smaller British railways, although it possessed few of the attributes which help to make a railway profitable, and its final disappearance into the Southern Region of British Railways makes particularly opportune the production of an admirable book* by Messrs. D. S. Barrie and C. R. Clinker, dealing with the remarkable history of the line, its physical features and methods of working, and its locomotives and rolling stock. No better authors could have been found for the task, as both are professional railway men, and both are also very keen railway enthusiasts, who have lived at one time or another in the Bristol area, and are intimately acquainted with the line. It is not easy to say what was the inception of the Somerset & Dorset Railway, as, from the earliest days of railway enterprise in the West and South of England, promoters had not been found wanting for schemes to connect the Bristol & English Channels by rail.

The Railway Mania brought forth several ambitious projects, but the Somerset & Dorset Railway, which eventually succeeded in forming a continuous route 61½ miles in length between Burnham (Somerset) and Broadstone (Dorset), did not set out with any such ambitious idea. In fact, it emerged from the amalgamation of two separate undertakings, each built to a different gauge. One was the Somerset Central Railway, which received parliamentary authorisation in 1852, and was intended to be virtually a branch of the broad-gauge Bristol & Exeter Railway. At the other end, the Dorset Central Railway was the remains of an unsuccessful project to link the Midland Railway with the South Coast, and in the year 1856 it secured the authority of Parliament to build its first section.

The authors have traced in interesting fashion the vicissitudes of the hectic days in which the broad-gauge was deserted; the two systems got together and amalgamated in 1862, and the through link was established, largely in the interests of the Midland Railway. Various leasing proposals by larger companies were made when the Somerset & Dorset found itself financially exhausted, and eventually it was leased to the Midland and London & South Western Railways jointly in 1875, thus beginning its life of nearly three-quarters of a century as one of the great joint railways.

Since grouping in 1923, the joint character has gradually disappeared from the operating viewpoint (although not financially) as the various functions were taken over by one or other of the partners. Thus, the ownership of the locomotives was taken over by the L.M.S.R. in 1930 and the rolling stock was divided between the partners. Later in the same year, the L.M.S.R. assumed responsibility for the operating and commercial work of the joint line, and for the provision of the traffic staff, while the Southern Railway took over the maintenance and civil engineering (including signalling), together with the accounting work. The famous blue livery vanished from the engines, and the Somerset & Dorset lost much of its individuality by reason of these changes. Nevertheless, it retained a certain distinctive character to the end, and under nationalisation has become part of the Southern Region, to which its commercial supervision was transferred on February 2 of the present year. We welcome the telling of the full story in this admirable little book as a noteworthy addition to railway literature.

* "The Somerset & Dorset Railway." By D. S. Barrie and C. R. Clinker. Published by the Oakwood Press, Tanglewood, South Godstone, Surrey. 7¼ in. × 5 in. 74 pp. + plates. Price 8s. 6d. cloth, and 7s. paper wrappers

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The Distant Signal

48, Litchfield Way,
London, N.W.11. July 26

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have just returned from a holiday spent in Denmark, and whilst there I was impressed by the type of distant signal in use in that country. This consisted of a colour-light signal continually flashing, with a yellow light for "caution" and green for "clear." The flashing light shows up much better than a steady light both during daylight and during darkness.

During fog or falling snow, this type of signal also would serve to inform a driver of his position, and would obviate the possibility of a driver mistaking a distant for a stop signal, as is quite possible in England when these signals are in the "clear" position if the driver during fog is unaware of his exact position.

Perhaps one of your correspondents could explain why no use is made of this type of signal in this country.

Yours faithfully,
J. R. P. MARTIN

"Annoyances of Late Arrivals"

23, Somertrees Avenue,
London, S.E.12. July 31

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The letter, under this heading, in your issue of July 16, refers to the late arrivals at Euston of the 4.30 p.m. sleeping-car train from Inverness, which is habitually held up at, and after, Carlisle by the 10 p.m. train from Stranraer to Euston, just as the 7.20 p.m. down from Euston to Inverness is regularly delayed at Carlisle by the down Stranraer service, 6.30 p.m. from Euston. The 4.30 p.m. from Inverness, with advantage, could start later, for, apart from "wasting time" all the way to Perth, it has an extremely awkward "crossing" at Kincraig with the 4 p.m. from Perth to Inverness, which ought to reach Aviemore before the arrival of the up London train.

The late starts of the 10.30 and 10.40 a.m. trains from Inverness to Kyle of Lochalsh and Wick actually date from October, 1945, when the departures were put forward from 11.45 and 12.25, and the arrivals at Inverness of the connecting trains from London and Perth similarly put forward from 10.18 and 11.20 to 8.35 (now 8.45) and 10.2 (now 10.5). The latter is the 6.40 (now 6.46) mail from Perth, off the 8.30 p.m. postal train from London, and, however admirable in theory this endeavour to expedite the post-office service may have been, its practical result has been lamentable, as your correspondent points out.

But I cannot see how the 6.10 a.m. from Helmsdale, due at Inverness at 10.21, comes into the picture, as it runs round and into No. 1 platform at Inverness, connecting with the 11 a.m. to the south, and keeps pretty good time, while the preparations for the departures of the 10.30 and 10.40 occupy Nos. 5, 6, and 7 platforms.

Yours, etc.,
R. E. CHARLEWOOD

Control of War Transport

Transportation Directorate, The War Office,
Metropole Buildings, Northumberland Avenue,
London, W.C.2. July 24

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In recent months you have published a number of letters on the above subject from officers who served with distinction during the late war in the Q (Movements) branch of the Staff or in the Transportation Service. In your issue of July 23, your correspondent, Colonel Jesper, issues a direct challenge to the War Office or the Transportation Training Centre, R.E.

You will agree no doubt that your estimable journal is not a suitable theatre of operations for the conduct of a paper battle over the details of military organisation, either in the last war or the next. It may, however, relieve the minds of your correspondents to know that all of the various points raised have been the subject of close examination in the War Office and elsewhere during the past three years, and a number of decisions has already been taken with a view to eliminating anomalies and increasing efficiency in the light of experience gained during the late war.

It is not suggested that finality has been achieved, and the recent suggestions made by your correspondents have been studied with great interest.

It is a source of considerable satisfaction to find that so many distinguished ex-officers are still interested in military affairs, and I hope that we may rely on their goodwill and assistance in reconstituting the R.E. (Transportation) Supplementary Reserve, particulars of which were published in your issue of June 11.

Yours faithfully,
R. F. O'D. GAGE,
Brigadier, Director of Transportation

Station Name Signs

22, Headstone Lane,
North Harrow, Middlesex. July 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Is it not time the main-line railways looked beyond their own grubby surroundings and took notice of the best ideas and practices which are plain for anyone to see?

Surely London Transport is an integral part of the transportation system of this country, and as such has shown great imagination and much courage in design and construction. Yet, despite the example set, the main-line railways seem determined to close their eyes and ignore it.

A specimen of this is in regard to station name signs. London Transport has adopted a sign which is pleasing in proportions, distinctive in character, and suitable in every way for its purpose. It is easy to maintain and always looks well.

Yet the main-line railways are still experimenting like novices, and an example of futile endeavour is to be seen at Wembley Central and Harrow & Wealdstone on the London Midland Region, where within the last week or so what appears to be the work of a carpenter-painter "handyman" has appeared. This takes the form of rectangular wooden boards, hand-painted, giving the station name against the rather ridiculous "B.R." motif.

This sort of thing is just wasting money without even the satisfaction of being effective. Why not adopt the London Transport target name-board for the whole country?

Yours faithfully,
T. AUSTIN

The Paget Locomotive and After

220, Edgwarebury Lane, Edgware,
Middlesex. June 29

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with great interest Mr. Willans' article on "The Paget Locomotive and After," in your issue of May 28, particularly his reference to the stagnation in steam locomotive design and its causes. Without departing from the traditional, engineers have developed the power of the steam locomotive to a maximum, within the various physical limitations imposed; they are now turning towards alternative forms of motive power in search of improved thermal efficiency and increased power.

Mr. Willans suggests that design development has suffered from a kind of parochialism; a nationalised railway system must avoid this condition and make possible a full-scale experimental research organisation. It is reasonable to expect that the results would fully justify the necessary expenditure; surely public funds have been sunk in less worthy causes.

With normal design, increased power implies larger boilers and cylinder dimensions with suitable pairs of driving wheels. On British railways this would indicate an articulated arrangement, which is possible without adopting the well-known Garratt system. A two-unit locomotive with a forward power unit carrying the boiler, usual power mechanism and driving wheels, could be coupled to a rear unit provided with a driving cabin, similar power mechanism and driving wheels; this rear unit would also carry the necessary fuel and water.

Policy apart, oil fuel has many attractions by virtue of its flexibility in control, convenience, and cleanliness, as well as economy in weight and space. A new design for use with oil fuel would have a boiler specially designed for oil burning. The addition of modern feed-water heating, possibly in conjunction with compounding, as is used with considerable success on the Continent, might be included with advantage.

Turning to possible departures from the traditional, consideration should be given to a modernised Paget design, equipped with a chain-operated R.C. poppet valve system, together with modern mechanical usage such as roller bearings, high duty alloys, etc., and incorporating the other features mentioned above.

Any realistic programmes should also include a full investigation into the development of a heat recovery system with particular reference to "The Anderson Compression

Cycle" recently described by Mr. Holcroft and discussed in *The Engineer*.

I suggest that an ultimate machine with a satisfactory increase in thermal efficiency, could be evolved to haul the heaviest trains over long-distance main-line routes at high average speeds, with excellent acceleration and performance on adverse grades.

Such a locomotive would have a T.E. value to the order of 50,000 lb., consisting of two power units coupled into a composite machine; each unit would be provided with a suitable cylinder arrangement connected to four coupled wheels. The total weight and overall dimensions of this locomotive would not be much in excess of those in use today with a T.E. of 40,000 lb. It is probable that the increase in thermal efficiency achieved would result in obtaining this power increase with approximately equal dimensions.

Let British locomotive engineers rally in defence of the steam locomotive which has served them so faithfully for more than 100 years, and demand an allocation for its development of a small part of the gigantic sums now being spent on various branches of engineering and physical research.

Yours faithfully,

E. W. HERRINGTON

A Historic Locomotive Photograph

British Railways, London Midland Region,
Advertising & Publicity Department,
Euston House, Eversholt Street,
London, N.W.1. July 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—As a result of research which has been in progress in connection with the forthcoming centenary (on August 12) of the death at Chesterfield, of George Stephenson, there has been brought to light by our Stationmaster at Chesterfield (Mr. O. B. Nichols) an old and somewhat faded photograph depicting a scene at the Chesterfield Station of the former Midland Railway.

When this photograph was examined and restored by the Chief Mechanical Engineer's technical staff at Derby, it became apparent that its technical interest was even greater than was at first thought, inasmuch as it represents a 2-2-2 engine of the famous "Jenny Lind" class built by the Midland Railway at Derby, with Matthew Kirtley's own design of boiler and fittings. It is considered both by our Chief Mechanical Engineer and by Mr. P. C. Dewhurst, M.I.C.E., the well-known authority on M.R. locomotive history, that this is the only photograph so far known to exist depicting a Derby-built "Jenny Lind" in this condition.

The original "Jenny Lind" engines were built for the Midland Railway by the Leeds firm of E. B. Wilson & Company between 1847 and 1849, while from 1851 onwards further examples of the type were built as new engines by the M.R. at Derby, in addition to others provided through rebuilding both by Derby and Wilson's, and by the two jointly.

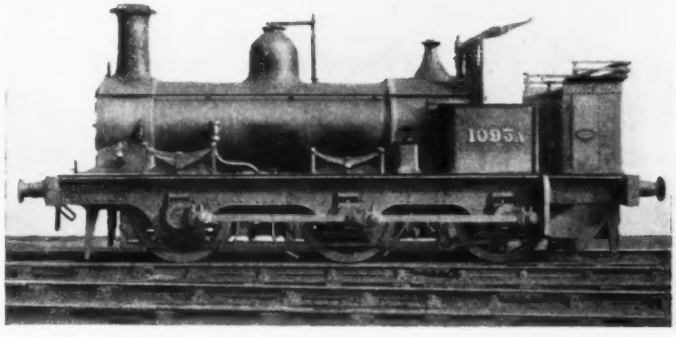
We are indebted to Mr. Dewhurst for certain early particulars of the actual locomotive which is depicted here as No. 728, but which was built originally at Derby, in May, 1855, as M.R. No. 8. From 1862 onwards this locomotive underwent various renumberings, and since it was only between September, 1867, and September, 1868, that it carried the number 728, this clearly fixes the period within which the photograph was taken.

In 1871-72 this engine, by then numbered 1006, was completely reconstructed as a 0-6-0 double-framed well tank; its original dimensions had included cylinders 15 in. × 20 in., and driving wheels 6-ft. dia., these becoming cylinders 15 in. × 22 in., and coupled wheels 4-ft. 2-in. dia. on rebuilding. Mr. Dewhurst states that only some of the motion, the boiler, and possibly some of the original leading and trailing wheels, were retained. Its life as a well-tank was largely confined to shunting duties on the brewery lines at Burton-on-Trent; after various further renumberings, it was eventually scrapped (as No. 1603) in September, 1920, after an overall existence, in its various forms, of nearly 70 years. A photograph of the rebuilt locomotive, bearing the number 1095A (which it carried between 1884-1907) is enclosed for purposes of comparison.

It is hoped to include an enlarged copy of the Chesterfield Station photograph of 1867-68 in the Railway Exhibition which British Railways (Eastern and London Midland Regions) are arranging to take place at Chesterfield in August in connection with the centenary of George Stephenson's death.

Yours faithfully,

JOS. O'NEILL
Advertising & Publicity Officer



"Jenny Lind" engine reconstructed as a 0-6-0 *well tank* (1871/72)

Chesterfield Station (1867/68) *with Derby-built* 2-2-2 *engine "Jenny Lind"*

The Scrap Heap

Undergrads in Industry

Fifty-six university students are working in Dunlop factories during the long vacation, and come from 19 universities in the United Kingdom, Belgium, Denmark, Finland, France, and Sweden. Most of them are doing temporary staff jobs, though a few wanting factory experience are working as operatives. They are paid the rate for the job according to their age, sex, and employment, the average duration of which is seven weeks.

* * *

Slow Post

Sir,—Before August, 1914, it was possible to post a letter in London in the morning to other parts of London and to receive a reply by post the same evening. We were justly proud of our postal efficiency. Today the morning post is delivered in some districts after many businessmen have left their homes, and the last collection has been made before they return in the evening. For this service, or rather lack of service, we are charged two-and-a-half times as much for a letter, and four times as much for a postcard, as in 1914.

We are indeed a long-suffering people. But even if we cannot hope to emulate 1914, ought we, in face of our national economic situation, to tolerate our present inadequate postal facilities?—*A correspondent in "The Spectator."*

100 YEARS AGO

From The Railway Times, *August 5, 1848*

At a Meeting of the Shareholders in the LEEDS and BRADFORD RAILWAY, held this day, the 2nd of August, 1848, at the London Tavern, in pursuance of advertisement, at which proprietors holding and representing other proprietors of many thousand shares attended,

CHARLES LLOYD HARFORD, Esq., of Cheltenham, in the chair.

It was resolved unanimously—

That in the opinion of this meeting, unnecessary delay has occurred in completing the portion of the Leeds and Bradford Railway, which is still unopened.

That at the next half-yearly meeting of the Company the Directors be requested to make a full statement of the causes of such delay.

That if the explanation offered by the Directors be considered unsatisfactory, a special meeting be demanded, and such other steps taken as may then be deemed advisable.

That the shareholders present pledge themselves to assist in carrying out the preceding resolutions, either by attending the half-yearly meeting in person, or by sending their proxies to Charles Lloyd Harford, Esq., of Cheltenham.

That the foregoing resolutions shall be advertised in the railway journals and the *Times* newspaper, and that all shareholders be particularly requested to attend the next meeting of the Company, or send their proxies duly stamped to Charles Lloyd Harford, Esq., of Cheltenham.

* * *

Railway Police Foil Wagon Raiders

Eastern Region police have staged a successful coup against wagon raiders at Barnetby, Lincolnshire. Assisted by the Lincolnshire Constabulary, officers of the Special Branch of Eastern Region railway police took up chosen positions at midnight recently and waited. In the early hours of the morning a van without lights drew up and several men left it to approach wagons stabled in the sidings.

After many packages and parcels had been transferred to the van the police attacked, and two men were captured; other arrests are expected. The abandoned van was found to contain tobacco and other black market goods valued at over £1,000. The gang's special equipment captured included road maps of Lincolnshire and Nottinghamshire, binoculars, and tools for forcing open locked wagons.

* * *

Forgetful Londoners

The number of articles of lost property left on London Transport underground railways, buses, trams, and trolleybuses and Green Line coaches during the first six months of this year, was the highest ever recorded. In all, 169,757 articles were received in the half-year ended June last, and it is thought by London Transport officials that the present increase of 19 per cent. is mainly attributable to the fact that more people are travelling on London's tubes and road services.

* * *

Ruskin's Railway Complex

It is gratifying to learn that an effort is being made to beautify our railway stations. Too long have we suffered the dreary drabness of main-line termini. Sixty years ago, when a similar effort was made, that arch-enemy of steam John Ruskin fought tooth and nail to maintain the unattractive: "There never was more flagrant nor impertinent folly than the smallest portion of ornament in anything concerned with railways or near them. . . ." He conscientiously contended that if there was any place in the world in which people are deprived of the disposition necessary to the contemplation of beauty it was a railway station. "It is," he continued, "the very temple of discomfort, and the only charity that the builder can extend to us is to show us plainly as may be, how soonest to escape from it. . . . the whole system of railway travelling is addressed to people who, being in a hurry, are therefore, for the time being, miserable."—*From "The Manchester Guardian."*

* * *

The Old Shunter

The 0-6-0 tank engine
That shunts about the yard,
Never seems to need a rest
Although it works so hard.

No limelight shines upon it
At head of famous trains,
It simply pushes wagons round
Or pulls them for a change.

It works with great abandon
As wagon buffers bang,
And never bats an eyelid
At each resounding clang.

Its fittings are not many
Few gadgets there I fear,
No sign of Caprotti valves
Or any Walschaerts gear.

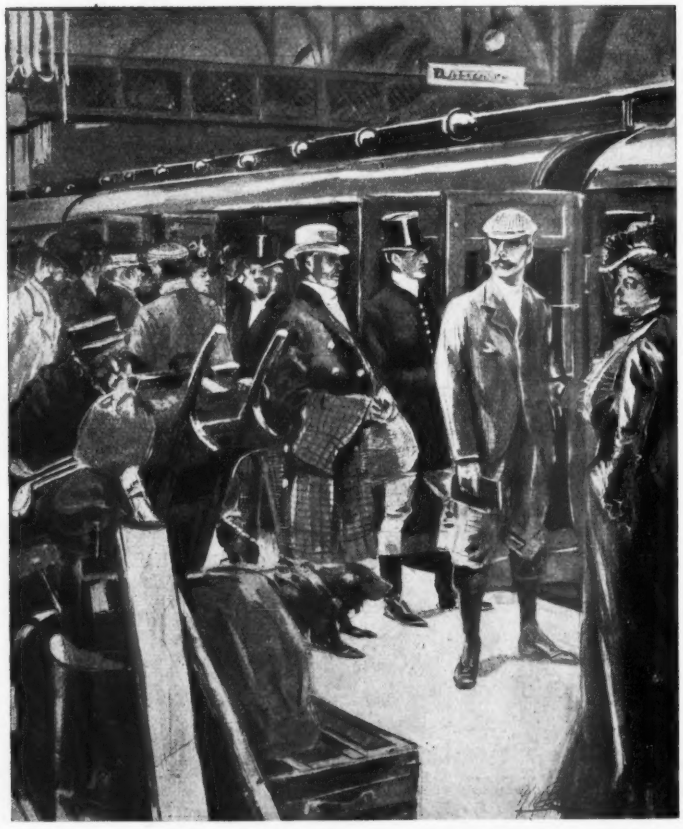
No patent roller bearings
To help it make the grade,
These things were not invented
When this old tank was made.

Its outlines are not pretty
Of glamour it has none,
But in the depth of winter
To drive it must be fun.

For when the snow is falling
On one thing crews can bank
It's always nice and cosy
In cab of shunting tank.

R. M.

The End of the London Season



The exodus to the North: The scene at Kings Cross Station (From "The Sphere" of August 11, 1900)

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

April Traffic Figures

The following are the approximate working results of the Rhodesia Railways system (all sections, including the Beira and Shabani lines) for the month of April: receipts £799,827, less expenses £572,918, leaving a net operating revenue of £226,909, representing an increase of £68,993.

New records were established during April on the Rhodesia Railways lines north of Bulawayo, when the train-miles run amounted to 527,000; the gross ton-miles figure (341,940,000) were the highest on record; and net ton-miles (151,971,000) showed the best monthly figure since October, 1944.

Housing for Africans

Faced with the urgent problem of providing extensive accommodation for African employees at a time when there is a marked shortage of skilled labour and ordinary building materials, the Rhodesia Railways have set up an organisation for the economic and rapid erection of *pise-de-terre* houses.

The present rate of construction averages (in good weather) 8½ two-roomed houses a week, and there is every prospect of this figure being stepped up to 30 a week in the near future. Six thousand of these houses are to be erected.

They have a concrete foundation, and an ant-course of tar; and the 8-ft. *pise-de-terre* walls are done with one lift of mould-shuttering. The roof, of curved corrugated asbestos sheets, is screwed to angles of hoop-iron embedded in the walls. A locally-designed and manufactured stove, which burns any type of fuel and does not emit smoke into the room, is being provided.

Report on Beira

A report has been issued recently by Mr. P. E. Millbourn—an adviser to the British Ministry of Transport—who visited Beira at a time of severe congestion and shipping delays, when certain lines had decided they would no longer send their ships to the port. Mr. Millbourn, with the guidance and assistance of the Railway Administration, the Port Company, and the three governments concerned, has enumerated various short-term and long-term recommendations.

It would appear that, with the limited facilities and equipment at present available, the port handles a tonnage which compares favourably with ports in other parts of the world, and the report states that "a remarkably fine job of work" was done by both the railway and port staffs; but what is much more important than the past is the future, for a port that may at any time become a bottleneck is likely to be a severe handicap to a developing country such as Rhodesia.

EAST AFRICA

Money for Railway Improvements

The East African Railway Advisory Council has decided on the expenditure of £1,595,890 for wagons, brake vans, locomotives, and diesel shunters; to prolong the life of existing rolling stock by reconstruction; build a new goods, locomotive and marshalling yard at Kampala; increase the capacity of the Mombasa—Nairobi line by the installation of a train control system; and build new stations at Mukutano, Kaptagat, and Juja.

The Kampala works will be the first phase of a big programme of alterations, and the council recommended as well £35,000 for works in the Nairobi inoffensive factory area; and £39,000 for projects in the Mombasa industrial region. It suggested deferment of the Nairobi factory area work until aerodrome development and restrictions on building heights had been decided.

New Rates

In producing revised rating proposals, the East African Railway Advisory Council has recommended the elimination of the present maximum rate on wheat flour carried towards the coast; the elimination of preferential rates on imported and local wheat flour; and the placing of wheat, wheat flour, bran, sharps, and pollards in the same classification (Class 10 for wagon loads and 8 for less than wagon-loads).

In order to avoid disruption of the distributing organisation, the council recommended the application of these new rates after the industry had made the necessary adjustments in the milling and supply arrangements. Members urged the conversion of all locomotives from coal and wood burning to oil fuel. This would cost about £269,000.

INDIA

Formation of Saurashtra Railway

The political changes in India have necessitated many adjustments to the railway system, and the latest is the amalgamation of small lines, belonging to Indian States, into one system. The Saurashtra Railway has come into existence as a result of a merger between the Bhavnagar State, Junagadh State, Gondal, Jamnagar & Dwarka, and the Morvi Railways. The new system serves the States of Western India, and has been divided into three districts, to be controlled by district traffic superintendents, stationed at Bhavnagar, Junagadh, and Jamnagar.

Lower Fares on Kalka-Simla Railway

The Eastern Punjab Railway authorities have altered the basis of first and second class passenger fares on the section between Ambala Cantonment and Simla, 60 miles of which, between Kalka and Simla, are narrow gauge. The new basis is 30 pies per mile per passenger for the first 150 miles and 15 pies per mile per passenger for additional distances for first class travel; and 16 and 8 pies respectively for second class travel, instead of the present 30 and 16 pies flat rates.

The railway has been forced to this concession by a falling-off in passenger traffic owing to cheaper fares available by buses and taxis. The railway fares on the flat basis worked out very high because the E.P.R. charged for twice the physical distance on the Ambala Cantonment—Kalka section, and four times on the Kalka—Simla section, because of the high cost of construction and operation of these mountainous lines.

PAKISTAN

Jodhpur Railway Equipment Purchased

It is understood that the Pakistan Government has deposited Rs. 50 lakhs in the Reserve Bank of India in respect of rolling stock and other equipment which is being purchased from Jodhpur Darbar for running the Sind section of the Jodhpur Railway. The total length of the

Housing for Rhodesia Railways African Staff

Mixing the soils. Mould-shuttering for forming the walls is seen in background

A row of completed houses. The administration is to erect 6,000 dwellings of this type

section is 318 miles, which includes the main line from Hyderabad to Khokhropar; a branch line from Mirpur Khas to Nawabshah (N.W.R.); and the Jhudo loop. The permanent way and fixed installations on this section belonged to the former Government of India and on partition became the property of Pakistan; but the rolling stock is still the property of Jodhpur Darbar.

UNITED STATES

C. & O. Stockholder's Complaint

A stockholder of the Chesapeake & Ohio recently challenged the decision of the railway to undertake purchases of equipment estimated to cost $3,555,248. Among the items on the programme were two steam turbo-electric passenger locomotives, to be built by the Baldwin Locomotive Works, and it was the acquisition of these which the stockholder believed to represent unnecessary expenditure on the company's part. When his claim was heard by the Interstate Commerce Commission, the stockholder appeared without counsel and personally cross-examined railway officers and a technical expert regarding the locomotive already in service.

Evidence was given that the turbine locomotive now running between Clifton Forge and Cincinnati is not being used for the whole of the Washington-Cincinnati run because of the weight and length of the passenger equipment which it would be required to haul. It was said that two of these locomotives would work throughout on this route when new lightweight passenger stock was received, while the third would be held for use as required.

Both representatives of the railway company stated that the existing turbine had worked to their satisfaction, although they conceded that certain adjustments required to be made. It was denied that this type of motive power was still in the experimental stage, Mr. R. P. Johnson, Chief Engineer of Baldwin's Steam Locomotive Division, saying that his company would not have accepted the order for the locomotives if they thought they were experimental.

Regarding the performance of the steam turbo-electric locomotive now in service, it was said that it had worked already loads heavier than those it was designed to haul, including runs in mountainous C. & O. territory. It was reported to be maintaining average speeds of 55 m.p.h. on journeys between Clifton Forge and Cincinnati, while, like the two now on order, it would be capable of maintaining 45 m.p.h. on mountain grades and 100 m.p.h. in level territory, the latter speed being attained with a load of 750 tons. The C. & O. steam turbo-electric locomotive was described in *The Railway Gazette* of March 5 this year.

Publications Received

Mile by Mile on the L.M.S. By S. N. Pike. Obtainable from S. N. Pike, 3, Canterbury House, Worthing, Sussex. 8¾ in. × 5½ in. 37 pp. Paper covers. Price 2s.—This booklet deals with the main lines from St. Pancras to Leeds (*via* Leicester and Nottingham) and Manchester, and from Euston to Liverpool, and is the third in a series by the same author. As in the companion volumes, the diagrams show the topographical features of the lineside and its vicinity, and are accompanied by a gradient section, and supplemented by notes. The summary tables of tunnels and watertroughs, and of rivers and canals seen from the train, are welcome features of interest. Although it is obvious that the title of the booklet was chosen, and the diagrams prepared, before nationalisation became effective, its value, particularly to those who are making the journey for the first time, is none the less on that account.

Narrow-Gauge Railways of Britain. By Henry F. Howson. London: Ian Allan Limited, 282, Vauxhall Bridge Road, S.W.1. 7¼ in. × 4¾ in. 80 pp. Price 3s. 6d.—The highly individualistic features of the many one-time narrow-gauge railways of the country have proved a source of particular fascination to the railway enthusiast. The literature on the subject ranges from tabulated reference-book brochures to full-size studies of individual lines. An intermediate course has been adopted by the present author, who writes in popular terms on a selection of both public and private railways likely to prove of interest to the holiday-maker. It is well illustrated, and printed on good art paper.

La Technique des Transports dans les Affaires. (The Study of Transport in Relation to Commerce). By Armand Paillard. Montreux, Switzerland: Imprimerie Nouvelle Ch. Corbaz S.A. 8¾ in. × 6 in. 12 pp. Paper covers. Price not stated.—The author considers transport a neglected subject in the education of students destined for a business career and gave a course of lectures designed to fill the gap at the University of Lausanne, of which this, the first, was delivered on November 5, 1947. M. Paillard does not allow his experience as Commercial Inspector attached to the general management of the Swiss Federal Railways to influence him in favour of railway transport, and impartially considers the merits of the different forms of transport according to the nature of the goods in question and the distance to be covered. The influence of transport costs on location of industry and on the prices of goods are touched on, with the promises of fuller consideration in future lectures. It is to be hoped these also will be published so that they may be read by the wider audience they deserve.

British Passenger Locomotives. R. Barnard Way & Reginald W. Wardale. Redhill, Surrey: Wells Gardner Darton & Co. Ltd., 49, Brighton Road. 7¼ in. × 4¾ in. 128 pp. Illustrated. Paper covers. Price 3s.—This publication has been produced primarily for locomotive "spotters," but is virtually a collection of details of the leading passenger locomotives in this country. To use the book the salient features of a passing engine have to be noted, and then, by reference to a selection of "Quick Spotter Silhouettes" (listed under pre-nationalisation companies), an illustration, short description, and the leading dimensions of the type observed may be turned up.

The Caledonian Railway Centenary (1847-1947). London: The Stephenson Locomotive Society, 32, Russell Road, Kensington, W.14. 8½ in. × 5½ in. 76 pp. Illustrated. Paper covers. Price 5s. net.—A remarkable combined effort on the part of a numerous and impressive team of contributors and photographers has produced this noteworthy and admirable publication. The book consists of nine chapters, of which the first gives an interesting and accurate account of the origin and development of the Caledonian Railway Company. This is followed by chapters on the various periods of locomotive history, compiled with that detailed care for which the Stephenson Locomotive Society is well known; with a chapter on passenger rolling stock; another on goods rolling stock; one on livery; a further one on steamships, docks, harbours, and canals; and a final chapter on tickets. There are appendices listing the Chairmen and principal officers of the company, and folding plates, reproducing in facsimile early drawings of layouts of the termini in Edinburgh and Glasgow, and of some civil engineering works. The maps include a general one of the system, with historical information and details of the various Glasgow termini and connections. The illustrations, both historical and modern, are comprehensive, well chosen, and well produced. Moreover, the price of the book is extremely modest. We congratulate the officers of the Society on their enterprise.

Bakelite Progress.—Recent technical improvements in moulding materials have made it possible for mouldings to assume tasks in the engineering world hitherto entirely within the province of cast metals. Many examples are given in a recent issue of the journal published by Bakelite Limited, 18, Grosvenor Gardens, London, S.W.1, and one of these concerns a Reavell air compressor fitted with a new type of moulded valve. Other articles in this issue deal with the application of laminated Bakelite to jigs and tools employed in the aircraft industry, lacquer for the protection of exposed surfaces from corrosion, resin coatings for packing paper, and the use of Warerite as a decorative wall surface and for the manufacture of table tops, trolleys, bars, etc.

Britool Service Tools.—This catalogue of Britool sockets, wrenches, ratchets, bihexagon ring wrenches and other tools has lately been issued to the trade by Jenks Brothers Limited, manufacturers of small tools and specialities for the railway and motor industries. A number of additions has been made to the firm's range of products, including a Jawring, this being a combination wrench with one open jaw and one bihexagon ring end of equivalent size.

Constructional Steelwork by Butterley.—This brochure illustrates the activities of the Constructional Engineering Department of the Butterley Co. Ltd. and contains 51 excellent illustrations of various structures and other products of the company's works at Butterley, Condor Park (Nottingham), Ruabon, and Ripley. These begin with Vauxhall Bridge and St. Pancras Station, and also include the Godavari River Bridge—over 9,000 ft. long and having 7,700 tons of steelwork in its 56 150-ft. spans; the 172-ft. bowstring span at Appleford on the Western Region main line; and a great variety of other bridges, workshops, and steel products. The company has devoted much time and experiment to welding all kinds of steelwork, and some of its other activities are foundry work, railway wagon construction and repairs, forgings, rolling mills, boiler house installations, ash-handling plant, self-supporting steel chimneys, and brick-making. The firm's three brickworks have a capacity of 30,000,000 bricks of all kinds per annum.

Paris Parcels Sorting Offices

Mechanised central sorting depot of the French National Railways relieves the receiving offices and expedites the despatch to railway stations

By Ch. R. Cazenave,

Paris Town Offices Superintendent, French National Railways

ALL the French railways systems before the formation of the French National Railways Company had opened town offices in Paris to meet the needs of their own traffic. These offices were situated mainly in the business centre of the capital. When, in 1924, their use was extended to handle traffic for all the systems collectively, which took place before the creation of the S.N.C.F. in 1938, their accommodation became insufficient. They were worked during nearly the whole of the day at full capacity.

The smallness of certain premises, the narrowness of the streets serving them, and the rush by the public to hand in parcels at the end of the day, too often involved delays to lorries and inevitable irregularity in the shuttle services to the stations. Further, these transfers set some complicated problems because it was desirable, for reasons of forwarding or good use of equipment, to make up different loads for each of the five Regions and, in respect of traffic for the same region, to separate ordinary parcels from express and registered parcels, which are not despatched from the same station.

In order to meet these difficulties, it was necessary to sort in an old town office closed to the public (Bureau du Bouloi), packages handed in at small offices with little traffic; after sorting, these parcels were sent to the main termini. Nevertheless, the Bouloi centre had insufficient equipment at its disposal, and this resulted in high handling costs. The situation, therefore, could become seriously complicated in the event of an increase in the traffic of the town offices.

Since January 1, 1942, a programme of modernisation has been pursued actively by the S.C.E.T.A., a subsidiary of the S.N.C.F. responsible for all outdoor services and the administration of town offices.

Figs. 1 and 2 show the conversion of a large office, such as St. Anne, incorporating the following principles:—

(i) Separate access, where possible, for traders' lorries and transfer vehicles.

(ii) Construction of raised decks of a height of 2 ft. 7½ in. beside traders' lorries, and of 3 ft. 11¼ in. beside transfer vehicles (the height of the station decks).

(iii) Use of gravity roller conveyors to reduce handling to a minimum.

(iv) Creation of modern units where the operations of labelling, charging, sorting out papers, and paying in, are carried out in succession.

(v) Better internal layout of offices, both from the point of view of the staff and the supervisor, who, from his seat, can see the whole of the shed.

All town offices in Paris now receive the following items for forwarding to France, and most of them for forwarding abroad:—

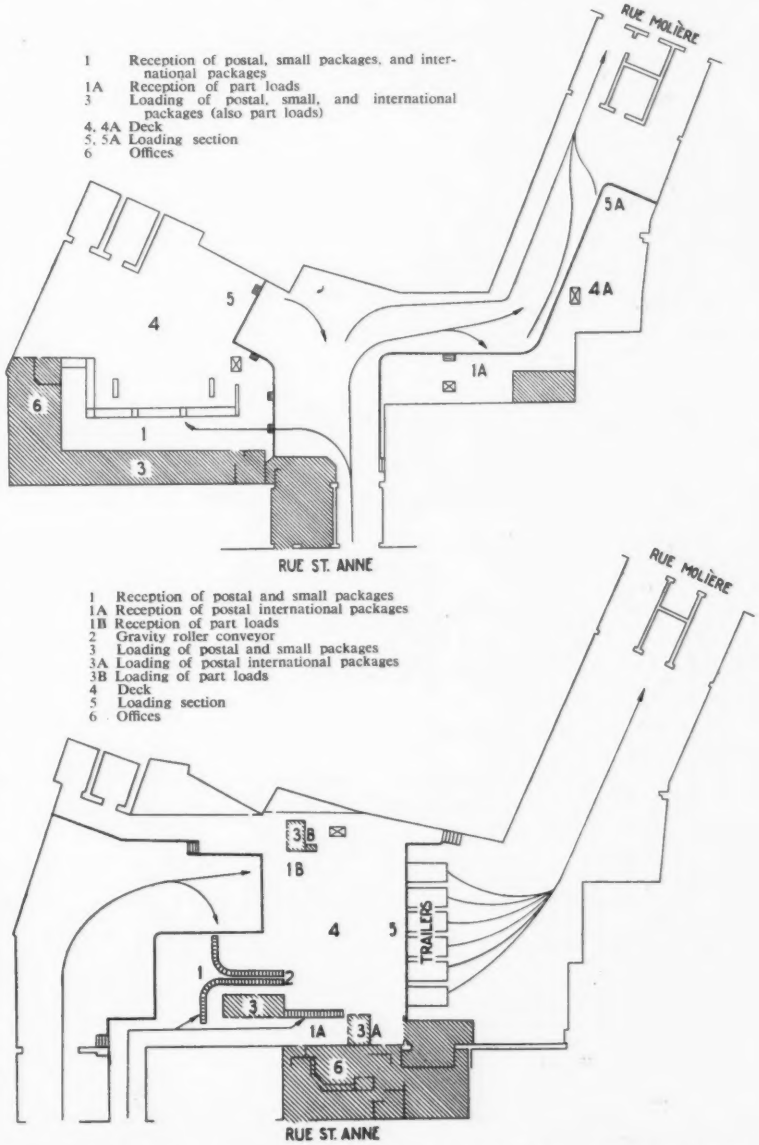
(a) Postal packages, maximum weight 20 kg. (44 lb.)	Transfer to main termini is free
(b) Packages of a maximum weight of 50 kg. (approx. 1 cwt.) ...	
(c) Part-load traffic up to a maximum weight of 3,000 kg. (approx. 3 tons) ... ... (Maximum weight per parcel 100 or 200 kg.—approx. 2 or 4 cwt.—according to the means of handling available in the office)	Transfer is subject to a small supplementary charge

At the present time the S.N.C.F. has 38 town offices for the despatch of parcels spread over the whole of Paris (see Fig. 3), and six private offices open for consignments from the large shops, to which must be added 32 auxiliary depots, which are offices of small forwarding agents, who contract with the S.N.C.F. against payment, for the acceptance from the public, the labelling and charging of postal and small packages. The total daily traffic, which is increasing regularly, varies according to the day of the week, being between 20,000 (Monday or Saturday) and 45,000 parcels (mid-week).

In order to sort parcels coming from offices where the possibilities of storing and allocation were insufficient, the Bouloi centre has been replaced by a sorting centre which is much better equipped, situated in the heart of Paris on the ground floor of the Quai d'Orsay Station, and capable of dealing with 50 tons an hour. All the parcels from the auxiliary depots and town offices are sorted at this centre (with the exception of (*a*) packages handed in at large town offices which handle their traffic under good conditions; and (*b*) express and registered parcels which, at the present time, continue to be transferred to the passenger termini).

The Quai d'Orsay sorting centre consists, in essentials, of an unloading section and a loading section. Light vehicles operating a shuttle service, loaded at the town offices or depots, come into the unloading section alongside a deck 6 ft. 7 in. wide (Fig. 4).

The unloading section includes three sub-sections, each capable of receiving



Figs. 1 & 2—The St. Anne office before modernisation (above) and after (below)

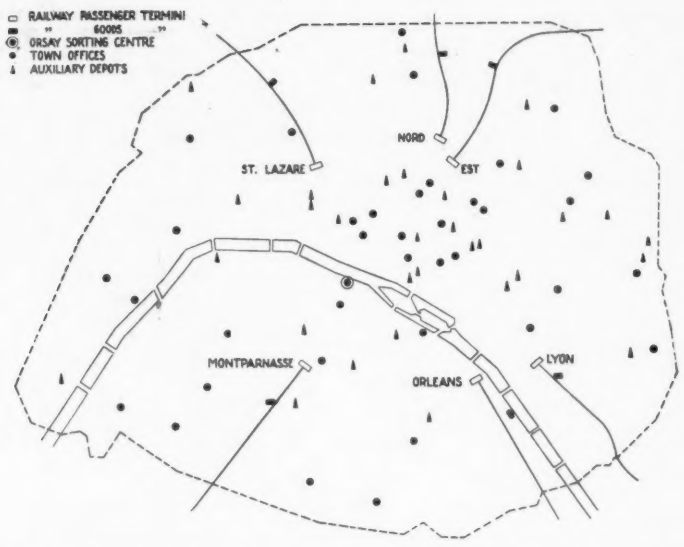


Fig. 3—Location of parcels offices in relation to Paris railway termini

three vehicles; the packages from each group of three vehicles are transferred on the other side of the deck to four internal drays, each corresponding to one of four sub-sections of the loading section. This enables a first sorting to be made (Western, South-Eastern, North-Eastern, and South-Western Regions). These internal drays have a loading capacity of 1½ tons, and rest, whilst stationary, on four supports. They are lifted and moved by 3-wheel Sovel electric tractors, having a guiding wheel, two driving wheels, and an electric motor fed by a 72-volt cadmium nickel accumulator of 260 amp.-hr. capacity.

The drays are taken to the corresponding loading sub-section, where secondary sorting of goods takes place, each dray feeding out on the other side of the deck to four or five road trailers. The capacity of offices and depots is thus increased, transfers are more regular, and the sorting of parcels is done not only with reference to the destination region, but also into principal destinations. In fact, sorting into 20 lots enables complete trailer-loads of parcels to be made up for Marseilles, Bordeaux, Lyons, Lille, Nancy, etc., and these are transferred directly to wagons in the terminal station roads without passing over the outwards deck, a step which enables considerable gains in handling and speed to be achieved.

This organisation has been improved further by using, at departure from the sorting centre, door-to-door containers with two wheels, which can be coupled to a special tractor for the road journey, and which can be loaded directly on to ordinary flat wagons with lowered sides in less than a minute. This arrangement saves one handling, and even, in an experiment being carried out for Bordeaux, enables parcels for the central area of that town to be sorted on departure from the d'Orsay centre in the order in which they will be delivered immediately after the train arrives at destination.

It is to be noted that it is intended to double the capacity of the d'Orsay sorting centre, which will allow of a daily classification of more than 500 tons into 40 lots. In this case the internal drays, instead of being placed against the loading deck, will pass alongside it in the same way as has been done at various mechanised stations of the former L.M.S.R., whose remarkable innovations have inspired and facilitated the modernisation of sheds now being pursued by the S.N.C.F. on a large scale. As an example, the Paris-Tolbiac station may be mentioned; it will be equipped with four belt conveyors and will deal with nearly 3,000 tons a day.

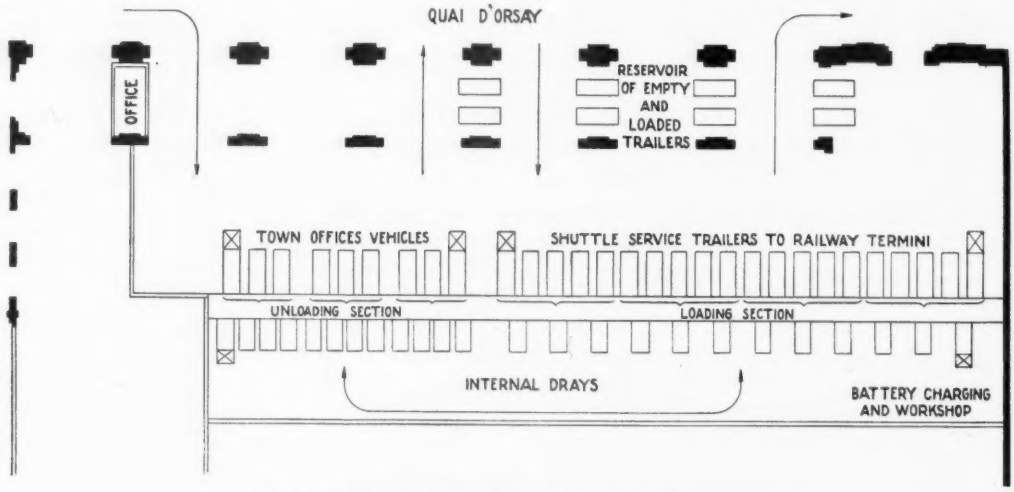


Fig. 4—Layout of the Quai d'Orsay sorting centre

ULSTER TRANSPORT AUTHORITY'S POWER TO BUILD VEHICLES.—In the Northern Ireland Senate, Major Dobbs drew attention to a clause in the Transport Bill which gives the new transport authority power to manufacture vehicles in the workshops. Moving the deletion of the "manufacture," Major Dobbs said that they must be careful not to give the authority exceptional powers. Obviously it must have the right to repair its vehicles, but was it going to compete with big locomotive building firms? Sir Roland Nugent, Leader of the House, replied that the clause contained only powers which the Northern Ireland Transport Board had had since it was founded and which the railway companies had held for many years. The authority could manufacture only for purposes of the transport undertaking. It could not go into the general market although it could build for a transport undertaking like Belfast tramways. With railways controlled by the authority obviously it would be reasonable to build rolling stock, but it would be unlikely that they would manufacture locomotives, a highly specialised business. Major Dobbs withdrew his amendment and the Bill was passed.

ECONOMY FROM PAPER SALVAGE.—During a concentrated salvage drive lasting only one week, paper collected in the offices of a North Country newspaper totalled 36 tons, which, after repulping with a 10 per cent. loss, provided 33 tons of new paper fibre. This particular newspaper requires one ton of paper to 36,000 copies.

Paris Parcels Sorting Offices

Interior of Quai d'Orsay sorting centre

Tractor and dray for internal transit at Quai d'Orsay

Part of the reconstructed St. Anne shed

Tractor and wheeled container for rail transport

Experiences with Railway Trolleys

Some novel types of power and hand-operated railway trolleys used in overseas countries

By Major O. P. C. Collier, R.E., General Manager, Eritrea Railway

An improvised railcar for the Franco-Ethiopian Railway, in which a Hotchkiss car was fitted with rail wheels and Ford "V8" engine

A LIGHT push-trolley was provided with a square sail for the Port Said to Mahamedia Light Railway in the 1914-18 war, and it proved most effective in the direction away from Port Said, with the prevailing wind, though was far less suitable for the return journey, when it either had to be pushed or hitched behind a train. Quite good sailing speeds were achieved on clean rails, but even a slight dusting of sand was enough to slow us down to a walking pace.

On the Palestine military railway there were several light motor-trolleys, built in the Egyptian State Railway workshops; they used a Triumph motor-cycle unit, with belt drive to the back axle. They were excellent little vehicles, carrying four people, and would tow a light push-trolley with signals equipment.

We also had some trolleys of an early two-cylinder type and others of a four-cylinder modern design. The author has memories of one of the two-cylinder variety when trying to keep a section ahead of the passenger train on the Lydda-Haifa line, and the engine seized-up due to oil-pump failure; so it was necessary to push the thing for about five miles.

Another light push-trolley had a Douglas motor-cycle complete, mounted on the top, and was belt-driven. The motor-cycle could be dismounted in a few minutes, though, as it had no clutch, the trolley had to be push-started.

The district engineers travelled about on a light push-trolley, manned by two natives, one pushing and running on the rail, while the other was resting. These trolleys could be removed from the track very quickly at the approach of a train.

When the Haifa-Damascus line was captured we found two improvised motor-trolleys, one of which was a Benz car mounted on rail wheels and the other an aeroplane engine, with propellor, on a flat truck, a top platform being swivelled round for change of direction. The Benz came to a sudden end when meeting a train travelling in the opposite direction.

In the last war a couple of trolleys were constructed in the Diredaoua workshops of the Franco-Ethiopian Railway (British Military Administration) to the design of Colonel Rose, of the South African Railways. These consisted of low-side ballast-wagons with a hole cut in the floor, in which was hung on four links a Ford "V8" lorry unit; it was driven by chains to the back wheels, chain tension being adjusted by swinging the whole unit by rods passing through the front buffer beam and held in position by lock nuts. The lorry chassis were shortened and driving wheels and boxes fixed up by the Kenya Railways.

Method of Engine Cooling

Loaded weight was about eight tons, and considerable difficulty at first was experienced in cooling the engines, despite the fitting of larger radiators and a big wind-scoop in front. Eventually, two 44-gal. drums of water, situated at the rear of the trucks, were connected to the circulation system, and from then on no further trouble was experienced.

One of these trolleys was shunted up and down the yard for an hour with a load of 60 tons behind it and with no sign of boiling. The trolleys originally were intended to be armoured with boiler plate, but this was used only once on a trolley, for the "Battle of Djibouti," which, fortunately, was bloodless.

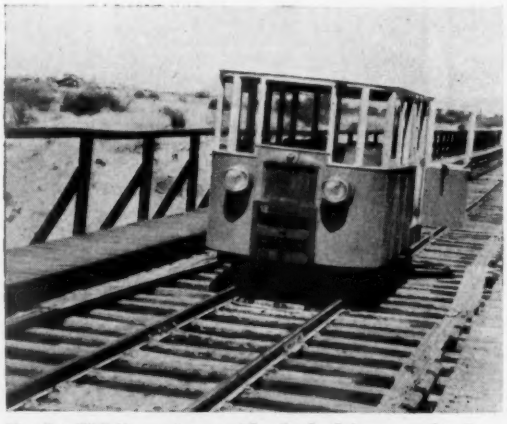
The chief snag with the trolleys, nicknamed the "Trickling Trucks," was that, having only the normal lorry-reverse, they had to run to one of the few triangles to turn round. An *in situ* turntable was fixed to one of them, on which it could be jacked up and turned, but it was a difficult job, and after it had become jammed in a crossing station, blocking both lines until pushed clear by a diesel railcar, the turntable was removed.

However, they were very good vehicles and did many thousand miles of useful running. Some ten people could be carried and a good deal of equipment. They could average 60 km. per hr. on fairly level going and had a consumption of about 6 miles per gal. of petrol.

These trolleys could tow a four-wheel service coach, or a flat truck carrying a road vehicle, which was useful for visiting pumping stations, some of which were out in the bush at a considerable distance from the line.

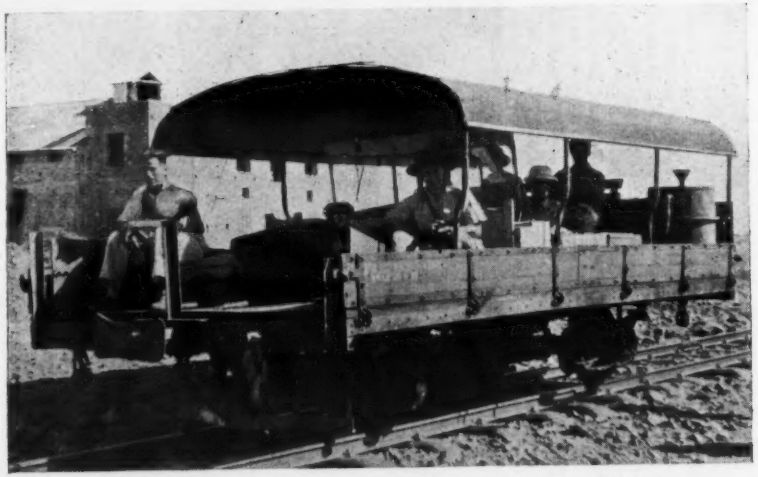
The author often has done the trip from Addis Ababa to Diredaoua, 500 km. approximately, in the day on one of the "Trickling Trucks," but usually took two days for the climb up, doing a pump inspection, or some other job, on the way.

The Franco-Ethiopian Railway De Dion trolley, built in 1910, and able to run in either direction



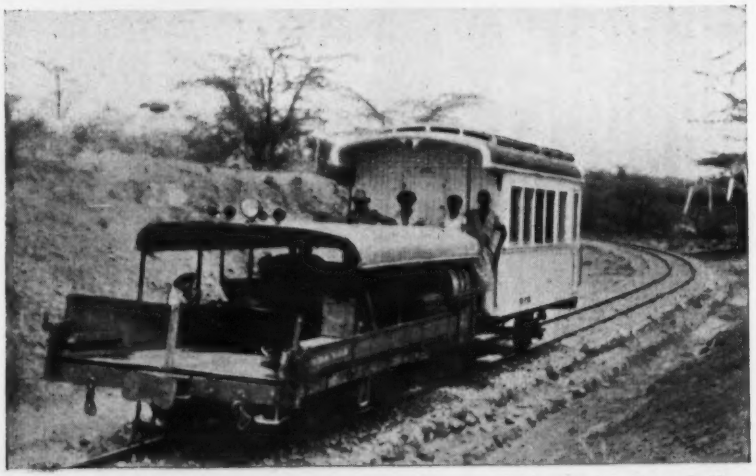
Ford "V8" engines with shaft drive are fitted to these Eritrean Railway motor-trolleys

Experiences with Railway Trolleys Overseas



Ballast truck trolley in use on the Franco-Ethiopian Railway

Turning a railway trolley fitted with a lowerable turntable



A four-wheel railway coach towed by a Franco-Ethiopian Railway ballast truck motor-trolley

Franco-Ethiopian Railway Renault trolley, which carried a dismountable turning and derailing gear

They were good sporting vehicles, as there was room for a couple of seats out in front of the wind-screen and canopy.

As the track was unfenced, and we had only a hand brake on the front wheels, collisions with animals occurred from time to time, the bag being something like one camel, one cow, one wart hog, numerous goats, a python, and a giant tortoise—not to mention a couple of push-trolleys! The trolleys were derailed a couple of times in these incidents, but without serious results.

The push-trolleys used by permanent-way gangs were a great menace on the Franco-Ethiopian Railway, as, though they were supposed to be protected both sides by flag-men, many collisions ocurred with trains, and not infrequently with fatal results.

The Caporal with the trolley, as well as his men, invariably swore that there was a flag-man out, whereas the engine crew were equally emphatic that there wasn't, and at the resulting inquiry it seldom was possible to arrive at anything conclusive. A good deal of bad feeling resulted between the permanent-way staff and the engine crews, and on one occasion a Caporal shot a driver dead, whom he alleged had over-run his flagman. The Caporal and Sous Caporal in each gang are armed with rifles, and all engine crews and permanent-way gangs were natives.

On one occasion, when travelling in one of the diesel railcars, we came round a bend into a cutting, to find a push-trolley, with all the gang on board, sailing down the grade in the opposite direction. They managed to jump clear, but the trolley, accompanied by a shower of tools, was thrown half-way up the cutting side. Fortunately, I had my Russian Chief Engineer in the cab, so there was no argument about a red flag that time!

There also were three other motor-trolleys. A Renault, with seating for five people beside the driver and a bonnet at each end, one covering the engine and the other a dummy for luggage space. This had a separate reverse box, so enabling it to run in either direction, and it also carried a dismountable turning and derailing gear.

A little De Dion, built in 1910, also was used; it had back-to-back seats, engine beneath seats and radiator both ends, and ran in either direction. An old Hotchkiss car on rail wheels, then fitted with a Ford "V8" engine, could be turned on a jack, but it was a most difficult operation, due to the danger of it toppling-over sideways, and it took the crew, station staff and a permanent-way gang to do the job successfully.

The wheels consisted of bored-out wagon-tyres welded to steel discs, and frequently gave trouble; eventually, this trolley stranded the author in the middle of a 30-km. section with a broken back-axle and as a result was scrapped. Converted road vehicles seldom appeared to be satisfactory for a long time.

Trolleys Made Locally

On the Eritrea Railway there are two enclosed "run-both-ways" motor-trolleys, each with four loose-seats, in addition to the driver. These are fitted with Ford "V8" engines with shaft drive, and probably were made locally, using some old chassis received from the Mogadishu Railway.

The Chief Engineer lately has constructed a vehicle with the frame of a Guzzi motor-cycle mounted on a push-trolley, also a hand-propelled trolley driven by two rotating handles through a gear to chain to the axle. Free wheel is obtained by lifting a pawl.

Western Region Bridge Demolition

Removal of sandstone bridge spanning platforms and tracks at Bruton Station

A BRIDGE spanning both platforms and tracks at Bruton Station, Western Region, being no longer required, and the stonework having deteriorated, it was decided to remove it by demolition. The bridge, constructed in 1856 of local sandstone, consisted of a segmental arch, 16 ft. wide, with a span of 54 ft. and a rise of 12 ft.

Preliminary work included removal of the whole of the structure above the extrados of the arch, and the drilling of holes 1¼-in. dia. for two-thirds of the depth of the arch thickness, in six lines. Charges of polar ammon. gelignite, linked by Cordtex instantaneous fuse, were inserted, and the holes tamped with sand. Each line was then covered by three rows of sandbags. Windows in station buildings, 68 ft. from the bridge, were protected by iron sheeting. For 10 ft. on each side of the bridge, the permanent way and platforms were protected by sleepers laid on a carpet of ashes.

The work necessitated complete occupation of the down line from 3 a.m. to 10.30 a.m., and the up line from 3 a.m. to 1 p.m. The bridge was blown at 4.30 a.m. There was no flash, and only a muffled report. Approximately 180 tons of masonry were demolished, of which a little over half fell on to the track. The main portion fell within 12 ft. of the arch on the station side and 15 ft. on the opposite side. No damage was sustained by the track or the buildings.

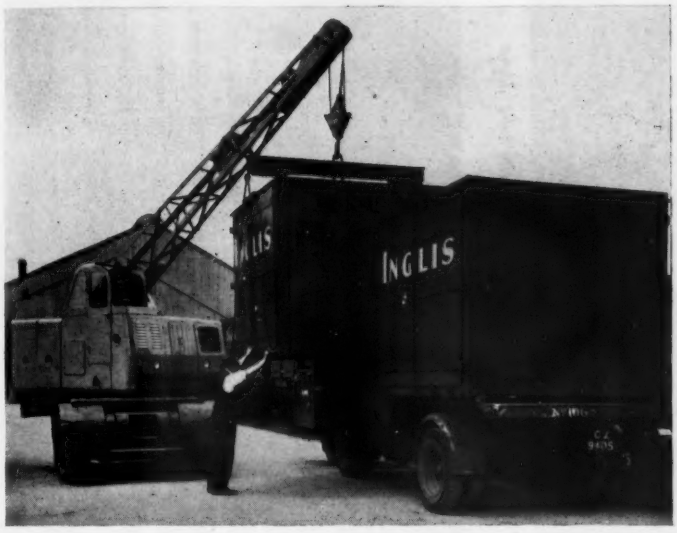
Apart from one or two large portions weighing over a ton, which were broken readily by hand, the débris was small. Several smaller portions, up to 5 cwt., were removed by nips. Two 2-ton mobile cranes were used, one on each side of the bridge, the débris being loaded up by hand into the crane buckets. Within 12 hr. the débris had been cleared and loaded up. Normal working was resumed at the appointed times.

Structure strapped to arch in readiness for demolition

RAILWAY DEFICIT IN SWEDEN.—For the first time since the 1932-1933 financial year, the Swedish State Railways closed their accounts for 1947 with a deficit. This amounted to Kr. 12,000,000 (approximately £850,000), contrasting with an operating profit of Kr. 39,000,000 (approximately £2,740,000) in 1946. It has been stated that the main cause of this unsatisfactory trend is to be found in the rapid and substantial increase in wages and salaries to all grades of staff and personnel.

Handling Bread Traffic by Rail

Steel containers are now in use on the G.N.R.(I.) to expedite the bread traffic between Belfast and the country depots



Containers being transferred from trailer to container truck by mobile crane and special lifting beam

THE system of bread distribution in Northern Ireland differs substantially from that in other parts of the United Kingdom, in that most of the bread there is baked in Belfast and then sent to the towns and villages throughout the Province. At one time, it was the practice to pack the bread in hampers and boxes and despatch it to the depots by rail in covered wagons. The following morning, the bread was collected from the depots by the bread servers and then delivered.

Although this method was in operation for many years, it was wasteful in both user and haulage of vehicles and, to a certain extent, in bread. As a result of damage caused by compression on the hampers, it was necessary to limit the loading of covered wagons to approximately 25 hampers, or 70 per cent. of their total carrying capacity. Furthermore, the handling of the bread when it was transferred to the delivery vans the following morning, was not entirely satisfactory.

To overcome the disadvantages of this method, the Great Northern Railway, Ireland, has designed a steel container, which can be loaded in the bakery and taken by Scammell trailer to the Belfast rail depot, where it can be transferred by mobile crane to a railway container truck and despatched to the country depots by ordinary goods or passenger-train services.

The Containers

The containers are 8 ft. long by 8 ft. wide and 7 ft. high and are of steel with two fully-opening double doors each side. The interior is fitted with three sections of tray racks, and as each section contains nine rows of racks taking three trays a row, there is a total capacity of 1,620 loaves. In addition, the bottom of each section has two intermediate racks for trays of pastry, or fancy bread.

Each container carries about the equivalent weight of bread that formerly was carried in one covered wagon and so, by loading two containers on a single container truck, the number of vehicles now required for bread traffic is reduced. The weight of the container is 32 cwt., bread 30 cwt., and trays 10 cwt., making a total of 3 tons 12 cwt. a loaded container, or 7 tons 4 cwt. load on each container truck.

The interior of the doors and ends of the container are lined with hardboard and the roof has an internal wood ceiling with a felt lining between the wood and steel. Two ventilators are fitted at each end, though, due to the internal hardboard lining currents of air are not allowed to play directly on the bread. The roof is fitted with two ventilators, which extract hot vapour from the freshly baked bread and help to reduce condensation.

Early experiments carried out on containers loaded with hot bread, confirmed that proper insulation of the roof was essential, if damage by condensation from the ceiling was to be avoided. The difficulty was overcome by the soft wood and felt lining, and all steel projections, such as bolts, nuts, or screw heads in the ceiling are insulated similarly.

The cranes used to transfer containers from road to rail vehicles are Coles 6-ton special petrol-electric type, which have a jib length of 19 ft. 6 in. and an out-reach of 14 ft. 3 in. for a load of four tons. The operational time for lifting a container from the road vehicle and securing it on the container truck does not exceed two minutes.

When bread leaves the oven, it is placed on the trays and taken by a conveyor to a despatch room; it then is loaded, by sliding the trays on to the racks provided in the containers. The containers are moved by mechanical truck to a loading point at the bakery, where they are placed by overhead crane on to the Scammell trailers for conveyance to the railway depot. On arrival there, the containers are transferred from the trailer to the container truck, by the mobile crane and a special lifting-beam.

The ends of the four steel wires from the lifting beam are fitted with pins, which are inserted in lifting lug brackets in the side of the container. When the container is lowered on to the truck, four locating brackets on the container are inserted in locating brackets on the underframe, each bracket being provided with a hinged locking lever and french pin.

When the containers reach their destination, they are unlocked by the head bread-servers, who allocate the supplies for delivery. The trays are removed and taken on small trolleys by the bread-servers to their carts or vans. It will be seen that no handling of the bread itself takes place from the time it leaves the ovens, until it is placed in the bread-servers' delivery vans and that handling the traffic on the part of railway staff is reduced considerably. The total daily forwardings from the G.N.R.(I.) goods depot in Belfast varies from 110 to 160 tons.

Two leading Belfast bakeries have adopted the new method of transport and eventually will use 75 containers a day. The system is worked on a two-day turn-round of containers and involves the removal of 75 empty containers from the container trucks and the reloading of 75 full containers between the hours of 8 a.m. and 11 p.m. Three-quarters of the forwardings of both bakeries are now handled in this way.

The containers were supplied complete by John Thompson (Motor Pressings) Limited, Wolverhampton, and the container trucks were constructed at the G.N.R.(I.) Dundalk Works.

VALUATION OF TRANSPORT SECURITIES.—After considering the evidence submitted at the hearing on July 20, bearing on an application by the British Transport Commission, pursuant to Section 17 (3) of the Transport Act, 1947, the Transport Arbitration Tribunal has issued an Order, dated July 23, 1948, determining the value of the following security specified in Part II of the Fourth Schedule to the Act:—

Name of body by which security was issued	Nature of security	Value per £100 nominal
The Company of Proprietors of the Stourbridge Navigation	Ordinary shares ...	£83

BRITISH STANDARDS INSTITUTION ANNUAL MEETING.—Lord McGowan, President of the British Standards Institution, speaking at its annual general meeting recently, referred to the growing size and influence of the Institution and said that more and more industries were becoming aware, not only of the need for standards, but also of the advantages of co-operating with the Institution in the preparation of standards on a national scale. Lord McGowan also stressed the importance of British Standards to the export trade, and recalled that he had asked all Industry Standards Committees to re-examine their standards from the point of view of exports. Many firms not formerly interested in export markets now were taking advantage of the help the Institution could give them. In conclusion, he urged everyone concerned with the guidance of industry to participate in the work of the Institution and to support it financially so that it might retain and improve its existing democratic structure. Sir William J. Larke, in presenting the annual report as Vice-President & Acting Chairman, outlined the great progress being made in every department of the Institution. Mr. Roger Duncalfe, Chairman of the Finance Committee, presenting the annual accounts, emphasised the need for industry to finance adequately the important work of standardisation as effected by the Institution.

Handling Bread Traffic by Rail

(*See article on page* 161)

Baker loading bread trays into the container

Container on Scammell trailer arrives at the rail depot

Rail trucks with containers loaded and ready for despatch

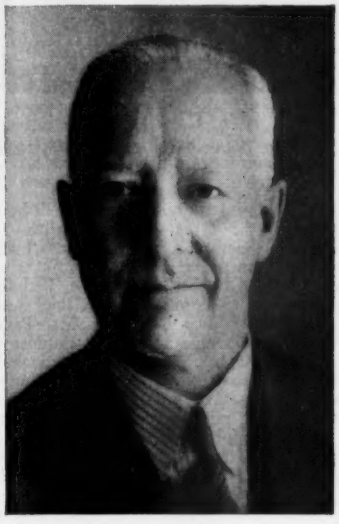
Bread-server unloading trays for dispersal to bread delivery vans

RAILWAY NEWS SECTION

PERSONAL

Colonel Sir Eric Gore Browne (lately Chairman, Southern Railway Company) has been elected Deputy-Chairman of the Provident Mutual Life Assurance Association.

Mr. George Orton, Chief Officer for Public Relations, Western Region, British Railways, who, as recorded in our July 30 issue, has been appointed Public Relations Officer to the Road Transport Executive, entered Great Western Railway service, in the Publicity Department, in 1903, and remained there until 1912, when he was transferred to the General Manager's Office for employment in connection with joint arrangements, private sidings, Board of Trade regulations, accidents and new works. Except for 2½ years war service, he was in that office until 1923, when he returned to the Publicity Department. He was made Assistant Publicity Agent in 1926. In 1929 he became the company's General Agent in the United States and Canada, and shortly after his return to England became Assistant Commercial Advertising & Publicity Agent, in January, 1932. In 1933 he was appointed Publicity Agent, and in 1934 became Commercial Assistant to the Superintendent of the Line. In 1942 Mr. Orton was designated Commercial Assistant to the Superintendent of the Line & Public Relations Officer. He was appointed Chief Officer for Public Relations on the personal staff of the General Manager in April, 1945, and in the next November the Publicity Department and the Press Office were transferred from the Office of the Superintendent of the Line to that of the General Manager, under Mr. Orton; the Trade Advertising work was added later. During his career Mr. Orton worked directly under seven Superintendents of the Line. He was chiefly responsible for introducing the idea of novelty excursions, such as the "Hikers' Mystery Expresses." He is well known in Fleet Street and Parliamentary circles, and is an old member of the London Press Club. Mr. Orton is well known as an amateur organist, and has given several recitals in the Royal Albert Hall and the old Queen's Hall. He is an Associate of the Royal College of Organists.



Mr. George Orton

Appointed Public Relations Officer to the Road Transport Executive

Captain Oliver Lyttelton has been elected the first President of the Sheet Metal Industries Association.

Mr. Alan Reginald D'Arcy Mount, B.A., A.C.A., who, as recorded in our July 16 issue, has been appointed Chief Financial Officer to the Hotels Executive of the British Transport Commission, has hitherto been Assistant for Control, Hotel Services, London Midland Region, British Railways. He was born on August 16, 1907, and was educated at Lancing College, and at Magdalene College, Cambridge. He was captain of the school cricket side at Lancing, and took an honours degree in Economics at the University. On leaving Cambridge he served a year with the firm of Gow & Parsons, of the London Stock Exchange, and thereafter was articled to Josolyne Miles & Page, Chartered Accountants. On becoming an Associate of the Institute of Chartered Accountants, Mr. Mount joined the Chief Accountant's Department, London Midland & Scottish Railway. As a Territorial officer, he left for France in September, 1939, as Signal Officer, 91st Field Regiment, R.A. (T.A.). In 1940 he transferred to Transportation troops, Royal Engineers, as a Finance Officer for Railways, and on his return from France was posted to the War Office in a similar capacity under the Director of Transportation. On joining the Transportation Directorate, 21st Army Group, in 1944, he was promoted Lt.-Colonel, and as Assistant Director of Transportation (Finance) was responsible for all financial matters affecting railways, roads, ports, and canals. He played a prominent part in the conduct of financial negotiations with the Belgian authorities in respect of the use of the Port of Antwerp for the Allies, and in that connection was mentioned in despatches. In 1945 he returned to the L.M.S.R. as Assistant for Control in the Hotel Services, under Mr. F. G. Hole. In 1947 Mr. Mount was a member of the Northern Divisional Committee, Hotels & Restaurants Association of Great Britain; and in 1948 he became a member of the council of management of the Association.

Mr. A. R. D'A. Mount

Appointed Chief Financial Officer to the Hotels Executive

Mr. William Wood, O.B.E., M.I.E.E., M.I.R.S.E., who, as recorded in our July 16 issue, has retired from the position of Signal & Telegraph Engineer, London Midland Region, British Railways, commenced his railway career in 1904 as a premium pupil on the North Staffordshire Railway. He was appointed Assistant Telegraph Superintendent, North British Railway, in 1911, and became Telegraph Superintendent in 1912. Shortly afterwards, he took over the electrical signalling, power, and lighting. Mr. Wood joined the L.M.S.R. in 1933 as Principal Assistant to the Signal & Telegraph Engineer, Derby; he was appointed Assistant Signal & Telegraph Engineer later in the same year, and Chief Signal & Telegraph Engineer in August, 1944. He has been a Member of the Institution of Railway Signal Engineers since 1913; he was Vice-President of the Institution in 1929, and President for the 1930-31 session. On January 1 last Mr. Wood was appointed Chairman of the Railway Executive Signal & Telegraph Engineers Committee, which position he held until his retirement.

Mr. William Wood

Signal & Telegraph Engineer, L.M.S.R., and London Midland Region, British Railways, 1944-48

Mr. G. W. Stewart, District Superintendent, Lincoln, Eastern Region, British Railways, has been appointed District Superintendent, Manchester, with headquarters at London Road Station.

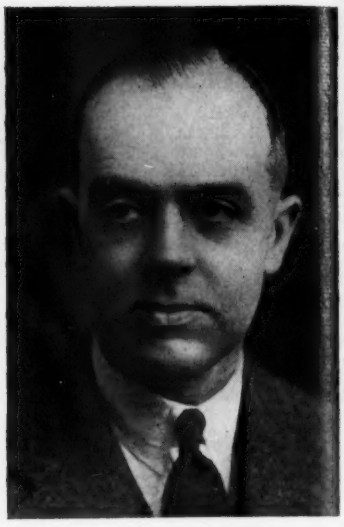
It is notified in *The London Gazette*, under the heading of Territorial Army—Royal Engineers, that Major-General Sir Donald J. McMullen has been appointed Honorary Colonel, Engineer & Railway Staff Corps, April 11, 1948, *vice* Lt.-General the Hon. Sir A. Richard Montagu-Stuart-Wortley, who has resigned.

Mr. G. J. Aston

Appointed District Operating Manager, Derby, London Midland Region, British Railways

Mr. G. F. Fiennes

Appointed Assistant Operating Superintendent, Eastern Section, Eastern Region, British Railways



Mr. C. P. Parker

Appointed District Engineer, Darlington, North Eastern Region, British Railways

Mr. G. J. Aston, Divisional Controller (Passenger Services), Office of Divisional Operating Manager, Derby, London Midland Region, British Railways, who, as recorded in our July 9 issue, has been appointed District Operating Manager, Derby, was educated at Christ's Hospital and at Queen's College, Oxford. He joined the L.M.S.R. in 1931, and was appointed Assistant District Controller, Toton, in July, 1938. He became Headquarters Inspector, Freight Services, Office of Divisional Superintendent of Operation, Derby, in November, 1940; Assistant Divisional Controller (Passenger Services), Office of Divisional Superintendent of Operation, Derby, in May, 1941; and District Controller, Patricroft, in March, 1943. From July to October, 1944, Mr. Aston was Acting District Controller, Willesden, and he was then appointed Divisional Controller (Passenger Services), Derby.

Mr. F. A. Mason, formerly Assistant Engineer, Trent Motor Traction Co. Ltd., has been appointed Chief Engineer, City of Oxford Motor Services Limited.

Dr. G. O. Hughes, Assistant Medical Officer, Southern Region, British Railways, has passed an examination for the Diploma of Industrial Health.

Mr. Leslie G. Hind, hitherto Superintendent at Leeds, has been appointed Assistant Chief of Police of the Scottish Region, British Railways. Mr. William Galloway, Chief Inspector, Police Department, Glasgow, has been appointed Superintendent, Glasgow.

Mr. George E. Orton

A cocktail party was held at the Great Western Royal Hotel, Paddington, on July 28, to celebrate the 45th anniversary of Mr. George Orton's entry into the railway service and his leaving the position of Chief Officer for Public Relations, Western Region, British Railways, to take up that of Public Relations Officer to the Road Transport Executive. Among Western Region officers present were: Mr. K. W. C. Grand (Chief Regional Officer), Mr. H. H. Phillips (Assistant Chief Regional Officer), Mr. C. R. Dashwood (Chief Accountant) and Mr. Gilbert Matthews (Superintendent of the Line). Others present were Major-General G. N. Russell (Chairman, Road Transport Executive) and Mr. J. H. Brebner (Chief Public Relations & Publicity Officer, British Transport Commission).

Mr. G. F. Fiennes, District Superintendent, Stratford, Eastern Region, British Railways, who, as recorded in our June 11 issue, has been appointed Assistant Operating Superintendent, Eastern Section, Eastern Region, was educated at Winchester and at Hertford College, Oxford, and entered L.N.E.R. service in 1928 as a traffic apprentice. After receiving training in the various departments, he was attached for a short time to the staff of the Freight Rolling Stock Controller at York. In 1934 he was appointed Assistant Yardmaster, Whitemoor, and was transferred to Cambridge in 1935 as Chief Controller. In 1936 he moved to York, where he was attached to the Freight Train Section of the Superintendent's Office. In January, 1938, he was appointed Chief Controller & Chief Freight Trains Clerk for the Eastern Section, Southern Area. He went to Edinburgh in August, 1939, as Assistant District Superintendent, transferring to Cambridge in January, 1940, in the same capacity. Mr. Fiennes was appointed Trains Assistant to the Superintendent, York, in October, 1941, and became Acting Assistant to the Superintendent, Eastern Section, Southern Area, in November, 1942. He was appointed District Superintendent, Nottingham, in March, 1943, and District Superintendent, Stratford, in January, 1945.

Mr. C. P. Parker, O.B.E., M.C., B.Sc., District Engineer, Hull, North Eastern Region, British Railways, who, as recorded in our June 18 issue, has been appointed District Engineer, Darlington, was educated at Bancroft's School and East London (now Queen Mary) College, University of London. He joined the Great Eastern Railway in 1910, but at the outbreak of war in 1914 enlisted in the London Rifle Brigade and subsequently received a commission in the Royal Engineers. He was awarded the Military Cross in 1918. On demobilisation in 1919 he returned to the Great Eastern Railway, in the Signal Section, Engineer's Department; he was transferred to the District Engineer's Office at Stratford as a Technical Assistant in 1922, and became Chief Assistant in that office in 1926. Mr. Parker went to Cambridge as District Engineer in 1937. In September, 1939, he was mobilised with the Royal Engineers (Supplementary Reserve), and served throughout the war on railway construction in the United Kingdom and North West Europe, attaining the rank of Lt.-Colonel; he was awarded the O.B.E. (Military). During his war service, he was appointed District Engineer, Stanningley, Leeds, but was unable to take up the position, and later was appointed to Hull, where he returned to civil railway duty on demobilisation in August, 1945.

We regret to record the death on July 9, in his 72nd year, of Mr. Roy V. Wright, Vice-President & Secretary of the Simmons-Boardman Publishing Corporation, and Managing Editor since 1912 of our American contemporary, the *Railway Age*.

Sir Clifford Paterson, a Director of the General Electric Co. Ltd., whose death we recorded briefly last week, joined the G.E.C. in 1919 to establish and direct its research laboratories, which, under his guidance, beginning with a staff of 29, have developed until they now have a staff of 1,750. He was a Past-President of the Institution of Electrical Engineers, Institute of Physics, Illuminating Engineering Society and of other bodies.

At a recent meeting of the Retired Railway Officers' Society, Mr. Ernest Wharton, President, announced the appointment of Mr. F. E. W. Cox as Honorary Secretary of the Society, to succeed Mr. A. S. Mills (Mr. Cox recently retired from the position of General Assistant to the Chief Civil Engineer, L.M.S.R.). Mr. Wharton referred to the willing and efficient work carried out by Mr. Mills during the past ten years, and handed him a cheque by way of an honorarium which the members had voted him in appreciation of his services.

International Sleeping Car Company

The present stock of the International Sleeping Car Company comprises 690 sleeping cars, 514 dining cars, 108 Pullman cars, 9 saloons, and 120 luggage vans —1,441 vehicles in all. Sleeping cars under construction number 45 in Belgium, 30 in France, 17 in Italy, and 20 broad-gauge vehicles in Spain. Difficulties which had arisen in Jugoslavia, where the company's internal services have been nationalised since April (see our March 12 issue), and in Roumania, have been overcome by long-term agreements concluded with the two Governments concerned.

In Jugoslavia, the company retains for twelve years its monopoly of sleeping and dining car services between Jugoslavia and Western Europe, Bulgaria, Greece, and Turkey. This ensures, among other services, unchanged operation of the company's "Simplon-Orient Express" through the countries of South-East Europe. On the other hand, the company relinquished all its services within Jugoslavia, which are now being operated by the Jugoslav State Railways.

The Jugoslav State Railways restored to the company all its all-steel cars which had been retained temporarily in Jugoslavia; and purchased from the company all its wooden cars, which also had been kept in the country pending a solution of the problem. A similar arrangement has been concluded with Roumania, the 35 all-steel cars of the company retained there having been recovered. The only international sleeping and dining car services in Roumania which have not been restored to the company are those operated on the Bucharest-Sofia route.

Negotiations are in progress with various railway administrations in Central and South-Eastern Europe with a view to further development of international sleeping and dining car services.

Sliding Roofs for Cartage Vehicles

A sliding roof for goods lorries and trailers, which will protect the loads from rain and can be pushed back to allow goods to be lifted out of the vehicles by crane, has been developed by the London Midland Region of British Railways.

The new type of roof is mounted on ball runners and will replace the tarpaulin sheet supported by hooped sticks, which at present is a feature of many railway cartage-vehicles. Due to the frequent removal of the tarpaulin when loading and unloading goods by crane, however, it has a high rate of wear. The new sliding roof is supported on a special body, the sides of which taper towards the top, thereby reducing risk of damage when parking in confined spaces in goods yards.

Five road trailers with experimental types of sliding roofs were put into service by the former L.M.S.R. before the war, and it is now proposed to extend the use of this design of roof to rigid-body vehicles. Three new Maudslay 5-ton lorries so equipped, have been put into service, and further bodies are being constructed at Wolverton for mechanical-horse trailers. As and when new machines become available, this method may be extended in preference to the use of loose sheets.

London Midland Region Vehicle with Sliding Roof

Cartage vehicle fitted with a roof which can be pushed back when lifting out goods by crane

North Eastern Region Refreshment Room Awards

Before the L.N.E.R. was absorbed into British Railways, a competition was inaugurated embracing the company's refreshment room services. This was to extend for a period of twelve months from April 1, 1947, with intermediate prizes for the three areas (Southern, North Eastern, and Scottish) after the first and second six months.

With the arrival of nationalisation an alteration became necessary, and the second half of the year was judged on a regional basis. For this period, in the North Eastern Region, the first prize has been won by Middlesbrough. The refreshment rooms covered by the competition comprise all the former L.N.E.R. refreshment rooms from Yorkshire to Berwick-upon-Tweed.

The marking was undertaken by selected members of the supervisory staff, many of whom were unknown to the refreshment room personnel; and points were given for the variety and appearance of food; the quality of tea and coffee; the efficiency, speed, and courtesy of the service to the public; the cleanliness of the premises and equipment; and the personal appearance of the staff. The average marks secured by Middlesbrough amounted to 93·2; these were followed by Berwick-upon-Tweed with 92·7, securing for the refreshment room staff at that station the second prize.

The first prize was presented to Miss Stephenson, Manager of the Middlesbrough refreshment room, and her staff on July 29, by Mr. J. L. Meadowcroft, Hotels Superintendent for the North Eastern Region of the Hotels Executive.

FRENCH RAILCAR CONNECTION WITH SOUTHAMPTON—ST. MALO SERVICE.—A new second class express railcar service is running on Tuesdays and Thursdays between St. Malo and Le Croisic in connection with the sailings of the British Railways (Southern Region) Southampton—St. Malo steamer, *Falaise*. The railcar serves Pornichet, La Baule, Pouliguen, and Batz-sur-Mer, and takes less than 3 hr. to do the 148-mile journey between St. Malo and La Baule.

CENTENARY OF THE "IRISH MAIL."—One of the most renowned and romantic trains in the world celebrated its 100 years of service to the public as it pulled out of Euston at 8.40 p.m., on Sunday, August 1. This train, the "Irish Mail," is the oldest named train in the world, and for its centenary run on Sunday night, passengers' luggage was labelled with a special commemorative sticker. On the Day "Irish Mail," which runs every weekday from Euston at 8.15 a.m. and Holyhead at 1.35 p.m., a colourful, illustrated menu appeared on the dining car tables. In addition, a souvenir booklet (price 2s. 6d.) printed in type similar to that used by *The Times* newspaper in 1848, has been produced for the centenary by the London Midland Region of British Railways. Well illustrated, the booklet tells the story of the Irish Mail route from the days of the Elizabethan post-boys, through the stage-coach era and up to the present day.

Ministry of Transport Accident Report

Farnborough, Southern Railway; November 26, 1947

Lt.-Colonel E. Woodhouse inquired into the accident which occurred at about 6.5 p.m. on November 26, 1947, a short distance west of Farnborough on the Southern Railway, when the 3.5 p.m. passenger train, Bournemouth West to Waterloo, composed of 10 bogie vehicles, drawn by 4-6-0 type engine, No. 860, which had been waiting for several minutes at failed automatic signal No. WA113, was run into in the rear by the 12.15 p.m. passenger train, Ilfracombe to Waterloo, approaching under an incorrect instruction given to it by the signalman at Fleet.

The collision demolished the two rear vehicles of the standing train and damaged the one ahead of them, and the engine of the colliding one was overturned. The first three coaches of the latter train, of which there were eleven, drawn by 4-6-0 locomotive No. 453, were slightly damaged.

One passenger was killed and another (a company's boilermaker travelling on duty) fatally injured. Eleven passengers received injuries necessitating treatment in hospital, where five were detained. Eleven others, with the driver and fireman of the Ilfracombe train, sustained minor injuries and shock. Assistance arrived promptly.

All four running lines were blocked, but were all clear again by 12.30 p.m. on the following day. Prompt action by the guard of the Ilfracombe train resulted in the 4 p.m. passenger train, Salisbury to Waterloo, travelling on the parallel up local line, being stopped just clear of the wreckage. It was a fine, clear, cold, night with nearly full moon.

Blowing of a main fuse in an unattended traction substation at Sturt Lane Junction, which interrupted the signalling supply over an area extending from the failed signal to that junction, was the cause of the train being stopped out of course. The accompanying diagram shows the lines, signals, etc., essential to a general understanding of the facts of the case.

Signalling

The section of line concerned is fitted with automatic and semi-automatic home and distant-type semaphore signals, installed when the low-pressure pneumatic signalling was put in between Basingstoke and Woking a little over 40 years ago, with track circuits throughout. There are signal boxes between those points at Hook, Winchfield, Fleet, Farnborough, Sturt Lane Junction, and Brookwood, of which Farnborough and Brookwood are open continuously. Pulling a "king lever" slide causes the semi-automatic signals to work automatically.

As a rule, the automatic signal next in rear of a controlled (semi-automatic) home is controlled indirectly from the signal box working the latter and does not clear till such home signal is pulled off, in order to safeguard crossing movements ahead. The plan shows the areas (which do not overlap) indicated on the signal box diagrams at Farnborough and Fleet.

Operating Arrangements

Trains normally are described by a bell code, preceded by "call attention," but if there is a general failure of track circuits, block working is resorted to, a train being offered by the code normally used as a description and accepted by that code being repeated to the box from which it was sent, there being no block instruments, "train entering section" and "train out of section" being used subsequently to complete the process.

To introduce such working the section concerned is first "swept" by a train carrying a written message from the signalman in the rear—no special form is provided for the purpose—intimating that such is to be done, and when "train out of section" is received for the train subsequent ones are offered, accepted, and cleared in the usual way, their drivers being warned to run cautiously. Any automatic signals sub-dividing such a manual block section become redundant and an order, on a prescribed form, is issued to each driver, directing him to disregard them between specified points and run at reduced speed to the home signal of the box with which block working has been established.

Until about 14 years ago the "stop and proceed" method of working was in use at the automatic signals, but after the discussions between the railways and the Ministry of Transport which followed some accidents that occurred under that arrangement, the Southern Railway equipped this area with signal post telephones and "P" signs, the illumination of which gave a visual authority to pass a signal at danger under certain defined circumstances.

Such signs were not provided, however, between Woking and Basingstoke at the semi-automatic signals, but only at those which always work automatically. They are brought into use in groups, not individually, operation of a switch energising all the signs on through and local lines back to the next open signal box in rear. Normally, they remain lighted until the failure causing them to be brought into use is rectified, but drivers are instructed that if they find a "P" sign already showing they are to wait for 3 min. and then proceed cautiously without telephoning to the signal box concerned.

Failures affecting a semi-automatic signal working automatically, because the signal box ordinarily controlling it is closed, are dealt with (unless a hand signalman is stationed at it) by the driver telephoning for instructions and then examining facing points, etc., ahead before he receives the signalman's verbal permission to proceed cautiously. (Special cautionary regulations cover the case where telephone communication cannot be established.)

There are telephones at all automatic and semi-automatic signals shown on the diagram, with separate instruments for each direction of traffic. An omnibus code ringing circuit, known as No. 133, serves the up through and local signals on the 24 miles between Basingstoke and Woking, with 63 connections to it of which 51 are at signals, where the instruments are disconnected when their cupboard doors are shut. Information showing the signal to which a particular telephone relates is given at the head of simple and concise instructions inside.

These require a driver to speak to Brookwood box, which deals with all signal telephone calls on the up lines in the first instance, the reason being that this signal box always has been open continuously, unlike those further west, although Farnborough has been open continuously since the outbreak of war.

In addition to the code ringing circuit mentioned, and the corresponding one for down line, No. 134, there is a third, with selective ringing, linking the signal boxes between Basingstoke and Woking, and serving several other places, such as inspectors' offices, etc.; with the instruments on another selective circuit to Woking Control, and those on some local omnibus circuits, there are 6 telephones in Farnborough box and 5 at Fleet.

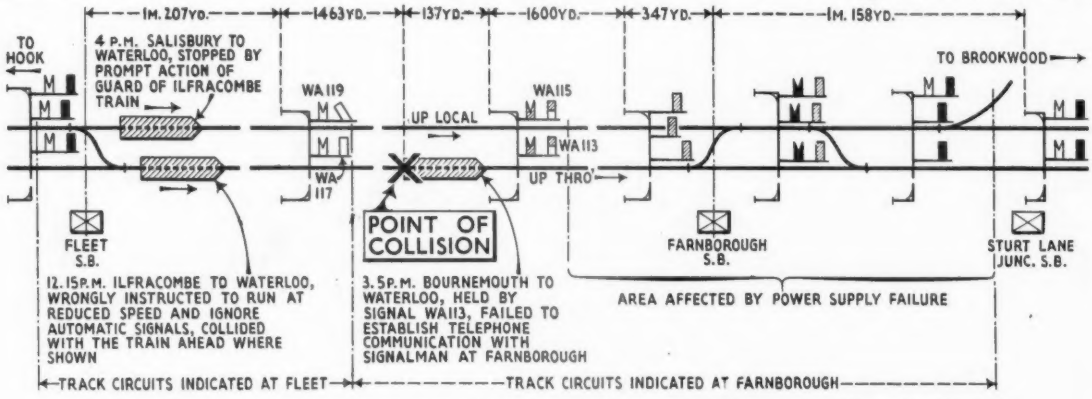


Diagram illustrating circumstances attending the collision near Farnborough on November 26, 1947

The Course of Events

The illuminated diagram at Farnborough is of the normally dark type and, as there were no trains near, the signalman did not know of the power supply failure, which occured at about 5.12 p.m., until told of it a few minutes later by Sturt Lane Junction, where wrong track circuit indications

had drawn attention to it. He found that his signals were locked and that he could not operate the "P" signs between Hook and Farnborough.

The failure did not affect signals west of WA 113, but he was unaware of that. Linemen were summoned, and as the facts reported to them suggested that a main fuse had blown, one of them went to the substation and replaced both fuses on the 440-volt single-phase supply circuit, which rectified the trouble at about 6.10 p.m., some 5 min. after the collision had occurred. The fuse had failed through deterioration in service, not a short circuit. The lineman who remained in Farnborough box said that the signalman seemed much occupied with telephone calls, though he did not concern himself with the conversations that went on.

The Bournemouth train passed Hook at 5.43 p.m. and was described to Farnborough in the usual way, when that box asked Hook if it could stop it and advise the driver of the failure, but it was too late. The train was a few minutes behind time, but ran normally as far as signal No. WA 113, where it stopped at 5.51 p.m. The driver, who had never been so stopped before in similar circumstances, spoke to Brookwood. He was told to speak to Farnborough and tried to do so, but got no reply; neither did the signalmen at Brookwood and Sturt Lane Junction when they attempted to assist him. The circuit was being used for other conversations and the driver overheard a reference to "P" signs, although those two signalmen said they were certain that they never mentioned them to the driver or to anyone else.

Repeated attempts, on different circuits, failed to produce any reply from Farnborough. There was a heavy background of speech, sometimes jumbled and unintelligible, on the wires, and a great deal of code ringing during the quarter of an hour before the accident.

Assuming that the reference to the "P" signs which he had heard meant that the one on signal WA. 113 was going to be illuminated, the driver returned to the footplate. No sign appeared, so he got down to telephone again, and the guard and a motive power inspector, travelling in the rear of the train, joined him. While endeavours were being made to get into communication with Farnborough, the lights of the Ilfracombe train, thought to be on the adjacent line, were seen. The collision followed, and the inspector then succeeded in calling Farnborough and reported it.

Meanwhile, arrangements had been made to open Fleet signal box, which took place at 5.48 p.m., when the Bournemouth train was close to it; but before the box was switched in the Farnborough signalman asked the man at Fleet to stop and caution all trains. The Bournemouth train was not bell described from Fleet, but the Ilfracombe train was stopped and sent forward at 6 p.m. after bell signals had been exchanged.

Though the conditions for manual block working had not been established between Fleet and Farnborough by "sweeping" the section, the signalman gave the driver of that train a form telling him to run at reduced speed and disregard automatic signals. Running at 30 m.p.h. or less, he saw the tail light ahead, but thought it must be on the up local line, until too late to stop. The 4 p.m. train from Salisbury was running a little behind, under similar instructions, on the up local, but was stopped by the guard of the colliding train.

(The report gives a detailed account of the course of the various telephone conversations, attempts to telephone, circuits used, and so on, with relevant evidence.)

The signalman at Fleet admitted that he had no reason to think that the Bournemouth train had cleared the section and that it did not occur to him to ask Farnborough if it had. He also agreed that the essential preliminaries for initiating manual block working had not been carried out. Indeed, it had not occurred to him that block working should be instituted and he had not misinterpreted the acknowledgment of the train description bell signal as an acceptance.

No suggestion had been made from Farnborough that block working should start, or that the form in question had been issued, but he jumped to the conclusion that this was what Farnborough wanted when asking that drivers should be cautioned. He thought, too, that the use of the form, together with a reference on it to the furthest signals affected by the failure, those at Sturt Lane, would save delay by making a stop at Farnborough unnecessary. He had never had to put block working into force at Fleet, but had done so once at Sturt Lane during the war.

due it did not occur to him to tell Fleet to hold it until it was known where the Bournemouth train was. He could have done this when Fleet box was opened, or later when the Ilfracombe train was described, but he confined himself to asking that it be cautioned, as he had asked Hook to caution the Bournemouth train, but too late in that case.

Possibly on account of short experience on an automatically signalled line, he seemed uncertain about the arrangements for introducing manual block working to meet conditions arising from an extensive failure. His requests that trains should be stopped and cautioned were at variance with the procedure contemplated by the regulations, namely, that at first successive telephones are to be used by drivers, followed by block working to avoid delays so entailed.

He was also hazy about the application of the written message to mark the passage of the last train before block working starts, and spoke of sending a message by, say, an up train to institute block working in the down direction and so on. He had arranged for down trains to be cautioned at Sturt Lane, and some were so worked

View of the wreckage after the collision near Farnborough, Southern Railway, on November 26, 1947

The signalman at Farnborough, who had been working there for three weeks, after six weeks as learner, could not recall all the telephone conversations he had as a result of the failure. He found the frequent ringing on the various bells most harassing, but maintained that although he was listening continually for his own code he did not hear it, except for conversations with Fleet, from the time Hook described the Bournemouth train at 5.43 p.m. until the inspector reported the accident. Preoccupation with messages was the reason why, until that train was described, it did not occur to him that it would be wise to caution its driver at Hook, though he knew when the failure occurred that it would be due before long. Having learnt that it had passed there, a telephone call was to be expected at any time, since he did not know how many intervening signals had been affected.

His evidence about what happened subsequently was confused and contradictory. The normally dark diagram would not, of course, in the circumstances, show the train standing at signal WA 113, and although the Ilfracombe train was nearly through. Exception cannot be taken to that. There are no down automatic signals between there and Farnborough, and those further west were working.

Inspecting Officer's Conclusion

Failure of the supply was merely incidental to the accident, which would not have occurred had the prescribed procedure been carried out. The equipment, although 40 years old, continues to give reliable service and cannot be criticised. The signalman at Fleet admitted that he made a serious mistake in jumping to the conclusion that it was in order to issue the form directing drivers to ignore automatic signals. His neglect of the necessary preliminaries, namely, to establish manual block working and assure himself that the section concerned was clear, was another serious error. He gave the drivers a false sense of security by leading them to believe that they could run through to Sturt Lane and ignore the signals controlled from the open box at Farnborough. He should have sent to that box by the Ilfracombe and Salisbury trains the described written notice and allowed no following one to

leave until "train out of action" had been received, indicating that through and local lines had been "swept," that is, proved unoccupied. Not until then should the form have been issued authorising automatic signals to be disregarded.

It is hard to account for this elementary mistake, for he appeared to be both keen and alert. Possibly he felt that the Farnborough signalman, a newcomer to the area, might be uncertain how to cope with the situation and that, as he put it, he was responsible for keeping things moving, even though his own acquaintance with the emergency procedure, as it proved, was insufficient. The fact remains that he took too much for granted. His hasty, ill-considered action was the immediate cause of the accident and he must bear the main responsibility. He is 33, with 16 years' service, 8 as signalman, with a good record.

The Farnborough signalman, 57, with 30 years' service and 8 as signalman, with a good record, is also involved by the needless detention of the train at signal WA 113 for nearly 15 minutes. It is not remarkable that he was much occupied with telephoning for some time after the failure, but after Fleet box was opened just before the train stopped at the failed signal, it is less easy to account for his lack of response to telephone calls relating to the train's non-appearance. He said he was getting uneasy and that such a call was to be expected.

Even if the driver manipulated the instrument wrongly, or gave the wrong call, this cannot apply to attempts made by Brookwood and Sturt Lane to call Farnborough. Neither circuit nor instrument was faulty. Possibly he became flustered. He appeared to be a slow thinker, unreceptive, and lacking in initiative, due perhaps to past ill-health. This may account for his evident confusion about how to start manual block working, and his insistence on cautioning drivers may have started a wrong train of thought in the mind of his colleague at Fleet. He cannot escape some criticism, though his inaction, by itself, would have led to nothing worse than delay. He was, admittedly, confronted with something quite outside his ordinary routine. Had he risen to the occasion, probably the Bournemouth train would have been out of the way in time.

Colonel Woodhouse is reluctant to criticise the driver of the colliding train, seeing the impossibility of determining the exact alignment of a distant light under footplate conditions. On any four-track line a driver is accustomed to seeing tail lights on adjoining lines. The instructions he received implied a clear line to Sturt Lane, predisposing him to think any tail light to be on the adjacent track. The most that can be said is that it would have been prudent, after being stopped and warned, to have regarded any red light with suspicion. It might have been placed to protect men seeking for, or remedying, the defect. His speed of 20 to 25 m.p.h. is not considered unreasonable in the circumstances.

The commendable presence of mind of the guard of the Ilfracombe train undoubtedly prevented a second collision with the wreckage.

Remarks and Recommendations

The failed fuse element consisted of two copper strips having their adjacent ends connected by an alloy "pocket" of low melting point. They are "necked" to determine the rating and blow at the neck on severe short circuit. On sustained overload the "pocket" melts. The central portion of the element has a boric acid coating, serving to prevent molten alloy maintaining a conducting path. It acts as an insulating seal after the molten metal has run into the absorbent filling powder in the cartridge. This coating is now confined to the "pocket," but formerly, as in the fuse in question, extended over the necks in the copper strip. Some impurity, or defect in manufacture, had caused corrosion at one neck, reducing its section so much that fusing occurred at considerably less than the rated current. No such failure has been experienced previously, but fuses in service are being inspected and the later pattern of element is being fitted.

The Farnborough track diagram being of the normally dark type, the signalman was ignorant of the power failure until advised by Sturt Lane, and it is desirable, in order that assistance may be summoned speedily, to have some form of "power off" indicator. A lamp normally alight would be a simple one.

Manual Block Working

Manual block working rarely becomes necessary, but when it does it is important that there should be no hesitation or uncertainty about the steps to be taken, especially when telephone inquiries are likely to be distracting the signalman's attention. He has little opportunity to refresh his memory by consulting regulations, however clearly worded. Any forms he has to use should remind him of what has to be done. The arrangement for notifying the forward signalman that block working is about to start is capable of improvement. The transition is akin to the change from permissive to absolute block on freight lines, and for the latter the Eastern Region uses a form which clearly reminds the rear signalman of his responsibilities.

Colonel Woodhouse feels that some such arrangement to cover the change from automatic to manual block deserves consideration, perhaps supplemented by some small elaboration of the regulations explaining the need for "sweeping" the section, which might usefully be made on the form as well. He also considers it would be an improvement if it were possible to differentiate between the bell signals employed for describing only and when manual block is in force. At present the repetition of a signal has a different significance under the two systems of working.

It appears desirable also, he thinks, to require the extinction of the "P" signs during manual block, or else to word the form issued to the drivers authorising them to ignore automatic signals so as to refer to the "P" signs as well, as without this a driver is faced with conflicting instructions.

The more speedily a driver establishes telephone communication the less the dislocation caused by a failure. Unless it is decided again to close Farnborough box at intervals, as was the case before the war, the signal telephone instruction cards concerned should be amended to say that Farnborough is to be called and not Brookwood (Basingstoke in the down direction), to eliminate the present roundabout way of establishing contact with Farnborough, which entails unnecessary telephoning on an omnibus circuit.

Drivers should be reminded always to use the telephone allocated to the signal at which a train is standing, or if they must use another—on a parallel line, say—to report the number of the signal concerned as well as that of the one they are waiting at; otherwise the reply may be lost, and would have been in this case, although as it happened none was involved. The signal numbers should be shown outside the telephone cupboards. This is not so at present.

Another undesirable feature is the use of omnibus code ringing with over 60 points. The signalmen all used the up line circuit No. 133 for communications between boxes on any matter. There is a risk of misunderstanding with this system. Despite identification precautions, one driver may hear a message intended for another and interpret it as applying to himself. It is quite within the range of possibility that drivers at different points might be listening for instructions from Brookwood, Farnborough, and Fleet simultaneously on the same circuit.

Elsewhere, individual circuits to signals are provided or selective telephones, communicating with the next open box ahead only, so preventing a driver from getting a message not intended for him and clearly indicating to the signalmen the point from which a call has been made. Even if regarded as too costly here in present circumstances, a first step could be made by severing the omnibus circuits at open boxes, and switching through when closed. There is always the possibility that an intermediate box may be opened unexpectedly, without this becoming known at once to the "key" boxes to which drivers telephone first under existing procedure. In such instances two calls have to be made before finding out the box to report to.

The report deals at length with the arrangements for operating the "P" signs. These are not provided at signals which are controlled from a box when open, but operate automatically at other times, sometimes for 18 hours a day. A driver detained at such times reports himself and receives instructions to examine the track ahead. After reporting all to be in order, he is authorised to proceed. Delay would be lessened by fitting "P" signs, brought into use when the box is closed, and Colonel Woodhouse suggests this be considered so that procedure shall be the same at all signals working automatically.

The arrangement whereby the signs at all automatic signals between a pair of open boxes are controlled by a single switch is peculiar to the former Southern Railway. A driver finding a sign already showing is instructed to proceed cautiously without waiting and telephoning. On other lines the signs can be switched on individually and are displayed solely at the signal held unnecessarily at danger, and then only for a limited time, the process being repeated when a following train reports. This does away with the possibility of verbal instructions being misunderstood, and the principle of block working is maintained, as authority to proceed is not given at a signal properly at danger.

Reason for Group Switching

The expense of individual switching was the reason given for adopting the group switching, but the latter must of necessity lead to drivers proceeding into occupied sections on their own initiative, an infringement of the block system to prevent which the 1933-4 discussions were held.

An up line track circuit failure between Fleet and Farnborough can result in the display of "P" signs as far back as just east of Basingstoke, 11 miles away. Interruption of traffic might result in detention at any semi-automatic signal at closed boxes for some time, while track examination, etc., are carried out, while the "P" sign at the signal in rear would authorise the following train to enter the section. This arrangement cannot, thinks Colonel Woodhouse, be regarded as desirable, and he recommends consideration be given to elaboration of equipment, as opportunity offers, on the lines adopted elsewhere.

Questions in Parliament

Transport Commission Departments

Mr. E. H. Keeling (Twickenham—C.) on July 26 asked the Minister of Transport if he would publish in the Official Report the addresses and telephone numbers of the central departments of the Transport Commission and Railway Executive.

Mr. Alfred Barnes, in a written answer, stated: No. The address and telephone number of the British Transport Commission are in the current Telephone Directory and the Commission's enquiry office will give information about any part of the organisation. Entries relating to Executives and departments which are not already in the Directory will, of course, appear as new volumes of the Directory are published.

Acquisition of Transport Undertakings

Mr. Ernest Davies (Enfield—Lab.) on July 26 asked the Minister of Transport (1) how many road haulage undertakings had been acquired by the British Transport Commission since January 1, 1948; what was the name of each; and how many vehicles involved: (2) whether any notices of acquisition had been served on any road haulage undertakings by the British Transport Commission under Part III of the Transport Act, 1947; and (3) how many road passenger undertakings or shareholdings therein had been acquired by agreement by the British Transport Commission since January 1, 1948; and what were their names.

Mr. Alfred Barnes (Minister of Transport): The British Transport Commission informs me that since January 1, 1948, it has come to agreements, now either signed or about to be signed, for the acquisition of shares in 115 road haulage undertakings, many of which are associated or subsidiary companies. These undertakings own 3,490 vehicles and 364 trailers. It is the intention of the Commission to begin the issue of notices of acquisition early in October. Owing to the stage which the negotiations have reached in some cases it would not be in the public interest for their names to be published. With regard to road passenger undertakings the Commission has arranged to acquire three undertakings vested in the British Electricity Authority. Negotiations are proceeding in certain other cases.

Mr. Davies: While thanking the Minister for his informative reply, and congratulating the Transport Commission on having made such progress, may I ask, first, if the Minister will give me an assurance that the basis of acquisition of these undertakings has in no case involved a cost any greater than that allowed for in the compulsory acquisition of these concerns as provided for in the Act; and secondly, whether, in view of the slowness with which the acquisition of passenger transport undertakings is proceeding, he will consider taking compulsory action in that case also?

Mr. Barnes: I can assure Mr. Davies that the terms have closely followed the terms laid down in Section 47 of the Act. With regard to the acquisition of road passenger services, I would remind Mr. Davies that, in the main, they depend on area schemes; and the acquisition of road passenger undertakings is proving to be a little more complex than road haulage acquisitions.

Sir Ian Fraser (Lonsdale—C.): How many of these firms the Minister is purchasing are small firms, the operators owning five or less vehicles?

Mr. Barnes: I really could not give an analysis of these acquisitions, but facilities for acquisition by agreement are open to small undertakers as well as to large undertakers.

Mr. Davies: Can the Minister give any indication about when he will name the vesting date after which no road transport can operate under private enterprise under the terms of the Act?

Mr. Barnes: Oh, no, I think the next stage is the order for the compulsory acquisition of the road haulage undertakings, and the getting of the organisation into being.

Parliamentary Notes

British Transport Commission Order Confirmation Bill

The British Transport Commission Order Confirmation Bill passed the report stage in the House of Commons on July 15, and was read the third time and passed on July 16. The Bill passed the report stage, and was read the third time and passed in the House of Lords on July 21.

Compensation to Employees of Transferred Undertakings

Mr. Alfred Barnes (Minister of Transport), in the House of Commons on July 20, moved that the Draft Transferred Undertakings (Compensation to Employees) Regulations, 1948, be approved.

Captain Peter Thorneycroft (Monmouth—C.) said that, as he understood the regulations, they were to ensure that persons displaced under the nationalisation scheme were given some compensation for loss of office. It was pursuant to section 101 of that disastrous Statute, the Transport Act, 1947. The idea they all had had in mind when that section was put in was that one of the effects of nationalisation would be that the number of persons employed in the overhead sections of the industry would be cut down substantially. It was one of the points constantly put forward as an argument for nationalisation. He asked whether anybody had, in fact, been dismissed; how many were affected by the regulations; who were going to be paid; and what was the total cost to the taxpayer.

With regard to the terms of compensation, he was bound to say he thought that on the whole the regulations were reasonably fair. The regulations were perhaps rather important, and he presumed that the Government had in mind what was to be done in similar cases in connection with industries. Suppose—it seemed hardly credible, but just suppose—the Government pursued the utmost folly and nationalised the iron and steel industry. Obviously, it would be improper to apply to the iron and steel industry terms of compensation entirely different from those applied in the transport industry. He assumed that the Minister had conferred with his colleagues, the Minister of Supply, the Minister of Health—who always held strong views about these things—and others concerned, to see what should be the general policy with regard to persons removed or dispensed with when other industries were nationalised, if there be any.

His last point concerned the £4,000. The compensation was worked out by taking the current net emoluments and setting a ceiling percentage on that which could be paid in compensation. The ceiling was two-thirds, so that if a man was earning £900 the maximum compensation he would receive would be £600; but, said the Government, in no circumstances could any earnings over £4,000 be regarded. He asked why? There must be some argument advanced for it. As it worked out, a man earning £4,000 would be paid two-thirds by way of compensation. Why treat a man differently if he earned £6,000? He did not want to quarrel with the order, which broadly speaking was reasonable and fair, but they ought to be told the answer to points of that sort. Could they be told, for example, what would be the cost to the Government if there were no limit of £4,000?

Mr. Barnes said he was gratified that Captain Thorneycroft on the whole found the regulations reasonable and fair. He certainly did not intend to respond to the invitation to wander into a general debate as to their potential impact on other nationalisation schemes already approved by Parliament or which might not yet have been before Parliament.

As far as his information went there had not been any dismissals. There might be one or two here and there, but he did not think there had been any changes which represented any substance in a discussion of that kind. Of course, the regulations, if approved, would be retrospective to January 1.

He had been asked how many persons were likely to be dismissed in the future and be covered by the regulations. His reply was that Captain Thorneycroft should not overlook the determined policy of the Government to maintain as far as possible a system of full employment in industry. Therefore, although they were providing compensation regulations of this kind, it was not for the purpose of anticipating wholesale dismissals, in view of their determination so to regulate industry as to reduce unemployment as far as they possibly could.

As to whether the regulations represented the scale or principle of compensation that would be applied to other industries, Captain Thorneycroft would recall that the railway industry had always been governed by compensation clauses of that description. He did not suggest that the principles embodied would not be taken into consideration, in view of the method adopted by the House, and Governments generally, of building by precedent on precedent; but he would not like to suggest that they were laying down a firm principle that would be applied generally. He took it that any Government would retain complete freedom to treat each industry on its merits. He reminded the House that the sum which would be paid to a person in receipt of a salary of £4,000 under these compensation regulations would amount to £2,677. While Parliament had every desire to safeguard a person's normal standard of living, he felt it must take account of the obligations it placed on the taxpayers. Here they were talking about compensation only, and it did not limit the opportunity of the individual to add to his income in any way. As they were dealing with a principle of compensation, they should limit the amount of compensation that they pay under these regulations.

Mr. David Renton (Huntingdon—Lib. Nat.) referred to the limit of £4,000, and said he saw the Minister's point of view; and, on the face of it, it did not appear to be entirely unreasonable. He wondered, however, whether Mr. Barnes had considered the possible indirect consequences as they might affect an industry which might be nationalised and for which the best brains and the highest-paid persons were needed.

The regulations were approved.

Notes and News

Executive Engineer Required. — An executive engineer is required by the Iraqi State Railways for three years in the first instance. Candidates should be qualified civil engineers and must have had railway engineering experience. See Official Notices on page 171.

Clerk, Class II, Required.—A clerk, Class II, not over 30 years of age, is required by the East African Railways & Harbours for the transportation department for one tour of 36 to 48 months, with prospects of permanency. See Official Notices on page 171.

Acquisition of Ilheos-Conquista Railway Approved.—According to a Reuters report from Rio de Janeiro, the Brazilian Chamber of Deputies on July 26 approved a Bill for expropriation of the Ilheos-Conquista Railway. The system is worked through a concession by the State of Bahia South Western Railway Co. Ltd., and consists of 81 miles of metre-gauge line.

Imperial Chemical Industries Limited.—Lord McGowan, Chairman of Imperial Chemical Industries Limited, said he was optimistic about the future of the country in a statement presented to the annual general meeting on May 20, but he emphasised the importance of facing squarely the grave difficulties now confronting us. It was well to remember that the aid we received under the European Recovery Programme had been given for one year only, its continuance being subject to subsequent annual enactments over a period of four years. Our position today was precarious, and the struggle to sell our goods overseas would become more and not less intense. The paradox of our position was that while our task abroad would be more arduous, at home we had a continuous pressure for higher incomes, more leisure, more amenities, and better conditions.

Mechanical Handling Exhibition to be Repeated.—Results justifying a repetition of the Mechanical Handling Exhibition and Conference another year have been reported. Attendances, consisting almost entirely of visitors professionally or commercially interested in materials handling problems, were 4,000 a day, while the conference sessions were attended by up to 550.

New Ticket Machine Company.—From July 1, the Westinghouse Ticket Machine Company has been renamed Westinghouse Garrard Ticket Machines Limited, and has undertaken the design, development, and sale of ticket machines manufactured by the Garrard Engineering & Manufacturing Co. Ltd., at Swindon. Westinghouse Garrard Ticket Machines Limited is to take over all the interests of the Westinghouse Brake & Signal Co. Ltd. in all Westinghouse ticket printing and issuing machines. The Chairman is Mr. Donald F. Brown, who is also Managing Director of the Westinghouse Brake & Signal Co. Ltd.

J. Stone & Co. Ltd.—There was a net profit in 1947 of £218,858 after providing £250,000 for taxes. Last year the net profit was £242,828 after crediting £220,000 for E.P.T. repaid, but the net profit for 1947 would be £303,953 if dividends were deducted gross. After allocating £50,400, an increase of £400, to reserve, the ordinary dividend for the year is maintained at 25 per cent. by a final distribution of 15 per cent., after which £410,896 remains to be carried forward against £346,443 brought in. Contingency reserve has received £77,198 no longer required for income tax on war damage expenditure. Consolidated trading profits were £498,488.

World Agents for Mills Presses.—The firm of Alfred Herbert Limited, Coventry, recently has been appointed by John Mills & Co. (Llanidloes) Ltd., sole selling agent throughout the world for Mills presses, excluding the 60-ton and other sizes of horizontal presses for use in mines and collieries.

Britain on the Screen.—Daily film shows for the benefit of overseas visitors are being presented by the Travel Association at the Tourist Information Centre in Leicester Square. The film covers all parts of the British Isles and gives tourists a preview of the places they may intend to visit during their stay. They are primarily for distribution overseas, however, and are now being shown in 17 countries.

Canadian Pacific Air Lines to Work Pacific Routes.—Air services from Vancouver to Sydney and to Hongkong are to be operated, as soon as equipment is ready, by Canadian Pacific Air Lines, a subsidiary of the Canadian Pacific Railway. The aircraft to be used will carry 40 passengers and 3 tons of freight. Canadian Pacific Air Lines was formed in 1942, since when it has operated a large number of feeder lines in Canada, especially to the northern regions not easily accessible by other forms of transport.

X-Ray Equipment for Industry.—A new company known as Newton Victor Limited, devoted to the design, production, distribution, and servicing of X-ray equipment for all industrial purposes, came into being on July 31, by the amalgamation under the ægis of Associated Electrical Industries Limited of the activities of the Victor X-Ray Corporation Limited, Newton & Wright Limited, and the X-ray research and manufacturing interests of the Metropolitan-Vickers Electrical Co. Ltd. A network of branches and service stations located in the principal centres of industry throughout the United Kingdom will continue and expand the facilities hitherto offered to users of X-ray equipment by the constituent companies. The head offices of Newton Victor Limited are at 15, Cavendish Place, London, W.1.

Wagon Repairs Limited.—Sir Leslie Boyce, Chairman of Wagon Repairs Limited, said at the recent meeting that supplies and materials had improved during the year, and the output of the company and its subsidiaries increased considerably. The output of repaired wagons and tank wagons was approximately 716,400, exceeding the previous year, which itself attained the highest level up to that time in the company's history, by no less than 77,900. During the current year, weekly output had reached even higher figures, and the company could claim with justification that it had contributed its full share in the effort to reduce the number of wagons awaiting repair. The company's works for repair and overhaul of vehicles designed for special traffic had been expanded. Considerable arrears of work had accumulated during the war and post-war years and it was reasonable to assume that the company's facilities would be employed fully for a considerable period ahead. The report for the year to March 31 showed

Presentation to S.N.C.F. Officers

When members of the British Railways, Southern Region, Lecture & Debating Society visited the ports of Dover and Dunkirk they presented a framed photograph of the locomotive "Winston Churchill" to the S.N.C.F. officers

Mr. I. C. Marshall, Vice-Chairman of the Society, accompanied by M. Duval, British Railways agent in Dunkirk, is seen making the presentation to M. Chauvières, Operating Superintendent, Dunkirk, who is with M. Maillard, Chief Stationmaster, Dunkirk; reference was made to the visit in our June 11 issue

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 *and* 50, *inclusive, or a woman between the ages of* 18 *and* 40, *inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order,* 1947, *or the vacancy is for employment excepted from the provisions of that Order.*

Government of Iraq

APPLICATIONS from qualified candidates are invited for the following post:—

EXECUTIVE ENGINEER required by Iraqi State Railways for three years in first instance. Salary up to I.D. 110 a month, according to qualifications and experience, plus high cost-of-living allowance I.D. 24 a month (I.D. 1 equals £1). Free passages. Provident fund. Candidates should be qualified Civil Engineers and must have had railway engineering experience. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/12852/3D on both letter and envelope.

THE WORK OF THE RAILWAY CLEARING HOUSE, 1842-1942. An account of the development and extent of the activities of this famous British railway institution. Paper. 9½ in. by 6 in. 24 pp. Illustrations. 2*s.* 6*d.* *By post* 2*s.* 8*d.*

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

CLERK, CLASS II, required by the East African Railways and Harbours for the Transportation Department for one tour of 36 to 48 months, with prospects of permanency. Salary according to age and experience in the scale £315 by £18 to £405 a year, plus cost-of-living allowance of £77 10*s.* a year for single man and between £118 and £187 10*s.* for married man, according to number of children. Outfit allowance £30. Free passages. Superannuation fund. Candidates not over 30 years should be educated to School Certificate standard and must have had good all-round British Railway training. Commercial and operating experience would be an advantage. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/21465/3E on both letter and envelope.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiment. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. *Price* 2*s.* *Post free* 2*s.* 3*d.*

NUTS AND BOLTS FOR DISPOSAL STOCK LIST

3½ x 1 Hex rd. hex bolts and nuts, approx. 10 tons; 1½ x ½ Cup sq. hex bolts and nuts, approx. 14 tons; 2½ x ½ Cup hex bolts and nuts, approx. 1 ton; 2½ x ½ Cup hex bolts and nuts, approx. 2 tons; 2½ x ½ Countersunk hex bolts and nuts, approx. 1 ton 5 cwt.; 2½ x ½ Countersunk hex bolts and nuts, approx. 1 ton; 3 x ½ Countersunk sq. hex bolts and nuts, approx. 16 tons; 2 x ½ Countersunk sq. hex bolts and nuts, approx. 1 ton 15 cwt.; 1½ x ½ Countersunk sq. hex bolts and nuts, approx. 15 cwt.; 4½ x ½ Countersunk sq. hex bolts and nuts, approx. 1 ton 5 cwt.; 3 x ½ Countersunk sq. hex bolts and nuts, approx. 1 ton 15 cwt.; 2½ x ½ Countersunk sq. hex bolts and nuts, approx. 15 cwt.; 2½ x ½ Countersunk sq. hex bolts and nuts, approx. 10 cwt.; 1½ x 5/16 Countersunk sq. hex bolts and nuts, approx. 1 ton; 1½ x ½ Cup hex castellated bolts and nuts, 5 cwt.; 1½ Nuts only, 10 tons.

All the above are bagged in their separate sizes, and are new. For full inspection details and prices apply Box 135, *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END. A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from *The Railway Gazette*, June 15, 1945. *Price* 2*s.* 6*d.* *Post free* 2*s.* 8*d.*

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that the net profit of £119.347 was £22,217 higher than in the previous year, after providing £231,000, as against £136,500, for taxation.

British Electric Traction Omnibus Services Limited.—A net profit of £414,443 for the year to June 30, 1948, was shown by these services, which are controlled by British Electric Traction Limited. Last year the net profit was £270,213. With a final distribution of 7 per cent. the ordinary dividend for the year totals 12 per cent., compared with 9 per cent. in 1946-1947.

British Railway Stockholders Union Limited.—A general meeting of the British Railway Stockholders Union Limited (in voluntary liquidation) will be held at the office of Kemp, Chatteris & Company, 1, Throgmorton Street, London, E.C.2, on August 26, at 12 noon, for the purpose of receiving an account showing the manner in which the winding-up has been conducted and the property of the company disposed of, and of hearing any explanation which may be given by the liquidator, and of determining by extraordinary resolution the manner in which the books, accounts, and documents of the company and of the liquidator shall be disposed of.

British South Africa Company.—A net profit of £951,564 was recorded for the year ended September 30, 1947. Adding the amount of £806,544 brought forward from the preceding year, the total available for distribution is £1,758,108, out of which the directors recommend the payment of a dividend of 16⅔ per cent., less income tax. There will then remain £1,155,823 to be carried forward. The British South Africa Company holds an 80 per cent. interest in the Rhodesia Railways Trust Limited, and the report records the names of the directors of Rhodesia Railways Limited who resigned their offices when the trust sold the shares of Rhodesia Railways Limited to the Southern Rhodesian Government. It is stated that the trust had intended to pay reasonable compensation for loss of office to the railway directors and to make gifts to certain members of the London staff of the railway company, as well as making suitable provision for the widow of Sir Henry Chapman in recognition of her late husband's long and outstanding services to the railway company. The trust had been advised, however, that it could not legally make such payments, although they could be made by the British South Africa Company. The directors of the latter company, therefore, have resolved to recommend to members that a resolution be passed to approve the payments in question.

New Train Describer Equipment.—Included in the plan to electrify and re-signal the Liverpool Street—Romford section of the Eastern Region, British Railways, is the provision by the General Electric Co. Ltd. of the largest set of train-describing equipments to be installed under single contract. The heavy suburban and main-line traffic that the line is planned to carry, in future could not be handled expeditiously by signalmen using the existing train describing system, and consequently, it is to be replaced. The new equipment will use modern automatic telecommunication apparatus, which, in view of its reliability, should be well suited for this exacting task. The new train describers will not only show the positions and destinations of the first three trains into a section, but also will memorise these facts concerning any other approaching trains. A system somewhat similar to that to be installed was provided on the Romford—Shenfield line in 1933, by the General Electric Co. Ltd.

Facilitating Iron and Steel Transport.—As a result of increased production by the iron and steel industry, British Railways is conveying a greater amount of coke for the blast furnaces. At a number of plants, gantry discharge of coke has been adopted to speed up the unloading work, and has resulted in an increased demand for hoppered bottom-door wagons. To overcome immediate difficulties in this direction, British Railways is arranging to convert 250 one-time private-owner mineral-wagons, by fitting them with hoppering. At the same time, the wagons will be fitted with top rails to increase their carrying capacity of this relatively light commodity. As there is a growing tendency on the part of the main iron and steel firms to roll larger plates, many of which are too wide to be conveyed on ordinary plate wagons, it has been decided to convert 40 double bolster and other suitable wagons into trestle-plate wagons. The fitting of trestles to these wagons will enable plates of a greater width to be conveyed in an upright position on the trestles, thereby taking advantage of the greater height of the vertical loading gauge.

Exhibition of Plastic Panelling.—Several references have been made in these pages recently to the plastic sheet material Formica made by De La Rue Insulation Limited. An exhibition of this decorative laminated plastic, which is being used increasingly for the interior decoration of railway carriages, hotels, restaurants, etc., together with a display of Delaron and Traffolyte and other associated plastics, was opened in the De La Rue showrooms at Imperial House, 84, Regent Street, London, W.1, on July 29. The exhibition, which will remain open for some time, includes the full-size half-section of a railway dining car illustrated in our May 21 issue.

Firth Brown Tools Limited.—Lord Aberconway, Chairman of Firth Brown Tools Limited, was able to report satisfactory progress in the company's first year of operations at the annual meeting. He said their export trade had been substantial in spite of quota restrictions, currency difficulties, disturbed political and economic conditions, and the greater efforts needed to get orders. They had been able to make a notable contribution to the export business of the country, and the value of export orders on hand on January 1 for execution during the current year exceeded the whole value of the export deliveries last year. Their profit from trading account in 1947 amounted to £249,949, and the directors recommended a dividend of 7½ per cent., less income tax, on the ordinary stock. The report was adopted.

Air-Rail Tickets Interavailable on Internal Routes.—British Railways and British European Airways jointly announce an extended scheme for the interchangeability of air and railway tickets. As from August 1 the arrangements which provided hitherto for the exchange of the return halves of rail or air tickets have been extended to include the outward halves of return tickets, also single tickets and sections of rail circular tour tickets. The holders of rail tickets using British European Airways internal services will pay appropriate supplements, while air passengers returning by rail will be able to claim a refund where the airway fare is more

than the rail fare. Passengers with return tickets, whether travelling outward or return by either surface or air, will enjoy the benefit of the lower fare charged for return tickets instead of paying two single fares. Railway steamship services, as well as certain independent shipping services operating between Great Britain, Northern Ireland, and Eire, and also the Channel Islands, are included in the arrangements. A feature of the extended facilities is that from August 1 every British railway station and town office will become an agent for the B.E.A. internal air services, and air tickets will be obtainable at a number of the principal stations.

Associated Automatic Machine Corporation Limited.—Speaking at the annual general meeting of the corporation in London, the Chairman & Managing Director, Major R. D. K. Kurling, M.C., said that during the nine months to December 31 they had slightly increased their holding in their subsidiary, the British Automatic Co. Ltd. They now owned 98·96 per cent. of that company's share capital. The Chairman again drew attention to the increased takings of weighing machines and the sale of confectionery through a chain of shops, on which he had commented in his recent statement to shareholders of the British Automatic Co. Ltd. The corporation's financial year had been altered to end on December 31 instead of March 31 to coincide with that of their subsidiary, and this would enable them in future to submit group accounts in accordance with the requirements of the Companies Act, 1947.

Kings Lynn Docks & Railway Company.—The fixed annual amount due to the company in 1946 and 1947 was £11,596; interest on the 4½ per cent. debenture stock for 1946 and for the period January 1 to July 31, 1947, amounted to £10,616, leaving a balance of £980 due to the company. As from January 1, 1948, the undertaking has been vested in the British Transport Commission. The report states that representations have been made to the Ministry of Transport that the railway compensation account (Railway Act, 1921) is the property of the stockholders and does not pass to the British Transport Commission under the Transport Act. The amount of this account as at August 31, 1939, was £7,153. This matter, in addition to a claim for compensation against a company for occupation of land of the Dock Company, is under discussion. The balance of money in the net revenue account for the final period is insufficient to meet the debenture interest for the five months ended December 31, 1947. The view is taken by the directors that the deficit amount is payable by the Ministry of Transport, and negotiations to this end are proceeding.

Forthcoming Meetings

August 7 (*Sat.*).—The Permanent Way Institution, Manchester & Liverpool Section, in the Gas Theatre of the Manchester Corporation Gas Offices, Mount Street, Manchester, at 2.45 p.m. Films: "Permanent Way" and "Scientific Research."

August 13 (*Fri.*).—Electric Railway Society. Visit to the Post Office (London) Railway.

August 18-28.—The Model Engineer Exhibition at the New Royal Horticultural Hall, Westminster. Open 11 a.m. to 9 p.m.

Railway Stock Market

Business in stock markets has been at a low ebb with small irregular movements in most sections, a notable exception being British Funds, which responded strongly to improved demand. Much of the money which has been awaiting investment appears to be going into gilt-edged, longer-dated securities being favoured, particularly nationalisation stocks. British Transport (1978-88) has been active and strengthened to 97$\frac{9}{16}$, while in sympathy with 3 per cent. Electricity stock, which reached the new high level of 100$\frac{4}{8}$, 3 per cent. Transport (1968-73) also moved up to 100$\frac{7}{8}$.

Beira Railway bearer shares have remained prominent on continued talk of "take-over" possibilities and assumptions that, in the event of any development of this sort, compensation would have to be considerably higher than the current price of the shares. Nevertheless, it is realised that market assumptions on such matters have often erred on the side of optimism, because all the relevant facts are not known. Therefore, buying of the shares, although active, has been proceeding on cautious lines so far. In fact, after reaching 62s. 6d., profit-taking brought the price back to 59s. 4½d.

With take-over rumours now subsiding, business in Brazil rails has been on a much smaller scale. It is now more generally realised that, although current prices, more particularly those of debenture stocks, may well prove moderate eventually, it is only prudent to regard Brazil rails as more than a short-term holding. According to some views, it may well be that there will be no further important take-over developments until next year. Meanwhile, Leopoldina ordinary are 9½, the preference stock 29¾, with the debentures at 59, and Leopoldina Terminal debentures 55. Great Western of Brazil shares have been steadier around 80s. San Paulo ordinary was firmer at 160.

Antofagasta ordinary improved to 12, and the 5 per cent. preference to 64½, following the latest payment in respect of preference dividend arrears. Central Uruguay stocks were dull and inactive awaiting news of any fresh developments in connection with the share-out of compensation money. There has been talk in the market that an entirely new scheme may be drawn up, but it is realised that it would be extremely difficult to make this absolutely fair to all classes of stockholders, and that there will have to be a compromise of some kind between the claims of ordinary stockholders and those of second debenture holders in the Central Uruguay Company.

United of Havana 1906 debentures were 14¾. Manila Railway "A" debentures have been steady at 90½, with the 5 per cent. preference shares 9s. 3d. Canadian Pacifics at 22½ have been affected by net loss reported for June.

Iron and steels continued to move narrowly, the good yields still failing to attract buyers. United Steel were 27s. 6d., and Colvilles 32s. 9d., while Richard Thomas & Baldwins 6s. 8d. units were 13s. 7½d., giving a yield of over 7¼ per cent. on the basis of last year's 15 per cent. dividend. Stewarts and Lloyds firmed up to 52s. 4½d., and Tube Investments changed hands over £6½. North British Locomotive 5 per cent. preference marked 24s. 7½d., and Vulcan Foundry ordinary, 27s. Elsewhere, Wagon Repairs 5s. shares have changed hands up to 21s., Gloucester Railway Carriage transferred up to 58s. 9d., and Birmingham Railway Carriage up to 32s. 9d. Awaiting the financial results and annual report, Charles Roberts shares continued to change hands around £7. Pullman Car "A" shares marked 16s. 6d., and the 5 per cent. debentures 104. Babcock & Wilcox at 65s. 4½d. held most of their recent rise, and T. W. Ward were 56s. 9d., with Ruston & Hornsby better at 51s. 3d. and the new shares 1s. 3d. premium.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Inc. or dec. compared with 1946/47	No. of weeks	Aggregate traffics to date: Total 1947/8	Increase or decrease
				£	£		£	£
South & Central America	Antofagasta	834	25.7.48	60,350	+ 13,350	30	1,572,880	+ 370,740
	Bolivar	174	June, 1948	$43,616	— $66,369	26	$442,327	— $232,536
	Brazil	—	—	—	—	—	—	—
	Cent. Uruguay ...	970	24.7.48	31,072	— 1,086	3	112,136	— 19,372
	Costa Rica	262	May, 1948	38,913	+ 2,930	48	349,643	+ 26,895
	Dorada	70	Mar., 1948	19,700	— 9,500	13	59,500	— 30,000
	G.W. of Brazil ...	1,030	24.7.48	24,100	— 4,900	29	972,100	+ 12,600
	Inter. Ctl. Amer. ...	794	June, 1948	$1,068,881	+ $66,817	26	$7,066,133	+ $163,290
	La Guaira	22¾	June, 1948	$116,312	+ $4,691	26	$640,293	— $44,089
	Leopoldina	1,918	24.7.48	67,946	— 3,723	29	1,574,395	— 352,823
	Midland Uruguay ...	319	June, 1948	23,203	+ 5,169	52	233,269	+ 28,135
	Nitrate	382	15.6.48	10,146	— 1,754	28	157,171	+ 30,971
	N.W. of Uruguay ...	113	June, 1948	4,183	— 1,664	52	6,784	— 3,243
	Paraguay Cent. ...	274	23.7.48	$110,805	+ $35,708	3	$354,169	+ $151,320
	Peru Corp. ...	1,059	May, 1948	180,761	+ 22,005	48	1,907,324	+ 230,353
	Salvador	100	Apr, 1948	c175,000	+ c30,000	43	c1,796,600	+ c313,600
	San Paulo	153½	—	—	—	—	—	—
	Taltal	156	June, 1948	8,770	+ 2,565	52	97,790	+ 46,870
	United of Havana ...	1,301	10.6.48	39,631	— 29,097	2	56,395	— 54,542
	Uruguay Northern	73	June, 1948	1,771	+ 432	52	15,802	— 1,763
Canada	Canadian National ...	23,535	June, 1948	9,927,000	+ 564,000	26	57,166,000	+ 4,055,750
	Canadian Pacific ...	17,037	June, 1948	6,886,500	+ 270,250	26	40,207,500	+ 2,501,250
Various	Barsi Light† ...	202	June, 1948	22,830	— 5,535	13	80,707	+ 472
	Beira	204	Apr., 1948	105,518	+ 25,361	30	186,662	+ 192,556
	Egyptian Delta ...	607	10.7.48	17,470	+ 929	14	178,422	+ 15,399
	Gold Coast ...	536	June, 1948	207,376	+ 67,243	13	665,638	+ 189,875
	Manila	—	—	—	—	—	—	—
	Mid. of W. Australia	277	May, 1948	29,088	+ 8,428	48	268,433	+ 72,477
	Nigeria	1,900	June., 1948	403,138	+ 91,614	13	1,292,292	+ 249,560
	Rhodesia	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
	South African ...	13,323	3.7.48	1,385,429	+ 90,736	14	17,703,164	+ 1,017,539
	Victoria	4,774	Apr., 1948	1,388,846	+ 615,854	43	—	—

† Receipts are calculated @ 1s. 6d. to the rupee